



# Fessenden Wastewater Lagoon Improvements

**City of Fessenden, North Dakota**

Apex Project Number 24.457.0150

CWSRF # 380890-01

December 2024

Apex Engineering Group, Inc.  
600 South 2<sup>nd</sup> Street, Suite 145  
Bismarck, ND 58504

**CERTIFICATION**

I, Susan Hazelett, P.E., a Registered Professional Engineer in the State of North Dakota, hereby certify that the Specifications for the Fessenden Wastewater Lagoons, City of Fessenden, North Dakota, were prepared by me or under my direct supervision and are complete and correct to the best of my knowledge and belief.

Signature \_\_\_\_\_  
Date \_\_\_\_\_



The seal is circular with the text "REGISTERED PROFESSIONAL ENGINEER" around the top and "NORTH DAKOTA" around the bottom. In the center, it reads "SUSAN HAZELETT" and "PE-7539". A date stamp "DATE 12/10/24" is visible at the bottom of the seal. A blue ink signature is written over the seal.

\_\_\_\_\_  
Susan Hazelett, PE  
Typed or Printed Name

\_\_\_\_\_  
7539  
License Number

**Fessenden Wastewater Lagoon Improvements  
Fessenden, North Dakota  
Apex Project # 24.457.0150**

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**Section 00030 - ADVERTISEMENT FOR BIDS**

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Sealed bids for the Fessenden Wastewater Lagoon Improvements, according to the drawings and specifications will be received by Jeff Roehrich, Public Works Commissioner or his designee at **PO Box 42, 602 Railway Street South, Fessenden, ND 58438** until **2 PM** on the **30th of January, 2025**, and then publicly opened and read aloud in the City Hall Meeting Room. The Contract Documents may be examined at the following locations:

Apex Engineering Group, Inc. – 600 South 2<sup>nd</sup> Street, Suite 145, Bismarck, ND 58504  
Fargo-Moorhead Builder's Exchange – 1010 Page Drive, Fargo, ND 58103  
Bismarck Builders Exchange – 215 Airport Road #202, Bismarck, ND 58504  
Bismarck Mandan Builder's Exchange – 4251 Morning Star Drive S, Mandan, ND 58554  
Minot Builder's Exchange – 2424 Burdick Expressway E, Minot, ND 58701  
Minneapolis Builder's Exchange – 1123 Glenwood Avenue, Minneapolis, MN 55405

The Contract Documents are available for download from the QuestCDN.com web site for \$27.00 (QuestCDN Project # 9385532). Bidders may also obtain hard copies of the Contract Documents from the office of Apex Engineering Group, Inc., 600 South 2<sup>nd</sup> Street, Suite 145, Bismarck, ND 58504 upon payment of a non-refundable fee of \$50.00.

Bids shall be based upon cash payment for the following general items:

- Reconstruction of the wastewater lagoons.
- All other improvements as shown and described in the Drawings and Specifications.

Bids will be received as a Lump Sum bid for General Construction. The Owner intends to award the Bid based on the lowest Bid. The Owner reserves the right to reject any and all Bids and to waive any informalities.

No pre-bid conference will be held.

Each Bid shall be accompanied by a separate envelope containing a Bidder's Bond in a sum equal to five percent (5%) of the full amount of the Bid, executed by the Bidder as principal and by a surety company authorized to do business in this state, conditioned that if the principal's Bid is accepted and the contract awarded to the principal, the principal, within ten (10) days after Notice of Award, shall execute and effect a contract in accordance with the terms of his Bid and a Contractor's Bond as required by law and the regulations and determinations of the governing body. The Bid Bond of the three lowest Bidders will be retained until the contract has been awarded and executed, but not longer than sixty (60) days. The Bid security is a guarantee that the Bidder will enter into a contract for the work described in the Proposal. The bidder must submit a Bid Bond as outlined above.

All Bidders shall have a valid North Dakota Contractor's license of the appropriate Class for the work, as required by Section 43-07-05 (NDCC). Bidders shall enclose a copy of the license or Certificate of Renewal in the same envelope as the Bidder's Bond, as required under Section 43-07-12 (NDCC). **Failure to do so will render the Bid invalid.**

Receipt of all Addenda issued during bidding shall be acknowledged by the Bidder on the outside of the Bid Envelope. **Failure to acknowledge any Addenda issued during bidding shall render the Bid invalid.**

No Bid will be read or considered unless it fully complies with the Bond and license requirements. Any deficient Bid will be resealed and returned to the Bidder immediately.

The successful Bidder shall be required to furnish both a Performance Bond and Payment Bond in the full amount of the Contract.

**Bidders on this work will be required to comply with American Iron and Steel Requirements of the Consolidated Appropriations Act, 2014. The requirements for bidders and contractors under this regulation are explained in the specifications.**

**Bidders are required to comply with Davis-Bacon prevailing wage requirements.**

**Bidders on this work will be required to comply with Title 40 CFR Part 33 – Participation by Disadvantaged Business Enterprises in the United State Environmental Protection Agency Programs. The requirements for bidders and contractors under this regulation concern utilization of Minority Business Enterprises (MBE), Women’s Business Enterprises (WBE), and Small Business Enterprises (SBE) and are explained in the specifications.**

**The goal for MBE is 2% of the total dollar value of the project. The goal for WBE is 3% of the total dollar value of the project. To demonstrate a good faith effort to comply, bidders must include the MBE/WBE subcontractor solicitation form in the bid security envelope. Failure to do so will render the Bid invalid.**

**Bidders on this work will be required to comply with the President’s Executive Order No. 11246, as amended. The requirements for bidders and contractors under this order are explained in the specifications.**

**Bidders are required to comply with Build America, Buy America Act requirements.**

**Bidders are required to comply with Bipartisan Infrastructure Law (BIL) signage requirements.**

The improvements to make the system operational shall be substantially completed by **October 18, 2025**. Final Completion of all Work shall be achieved by **June 30, 2026**.

ALL QUESTIONS REGARDING THE CONTRACT DOCUMENTS SHALL BE DIRECTED TO THE OFFICE OF: Apex Engineering Group, Inc., Susan Hazelett, PE at 701-224-3101 or by email at [Susan.Hazelett@ApexEngGroup.com](mailto:Susan.Hazelett@ApexEngGroup.com). All questions must be received in writing or by email on or before ten (10) days prior to the bid opening. Responses to technical questions will be issued by addendum within five (5) days prior to the bid opening.

Dated this 11 day of December 2024.

\_\_\_\_\_  
Jeff Roehrich, Public Works Commissioner  
City of Fessenden, North Dakota

**Fessenden Wastewater Lagoon Improvements**  
**Fessenden, North Dakota**  
**Apex Project # 24.457.0150**

**Section 00100 – INSTRUCTIONS TO BIDDERS**

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**ARTICLE 1—DEFINED TERMS**

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders.
  - B. *Successful Bidder* – The lowest, responsible, and responsive Bidder to whom Owner (on the basis of Owner’s evaluation) makes an award.
  - C. *Engineer* – Apex Engineering Group, Inc., Bismarck, ND
  - D. Other terms used in the Bidding Documents and not defined elsewhere have the following means, which are applicable to both the singular and plural thereof:
    - 1. Base Bid – The sum stated in the Bid for which Bidder offers to perform work that is described in the Bidding Documents as Base, to which work may be added or from which work may be deleted for sums stated in the Alternate Bid.
    - 2. Alternate Bid – The amount stated in the Bid to be added to or deducted from the amount of the Base Bid, if accepted.
    - 3. Furnished – Shall mean equipment or material procured by the Owner and turn over to the Contractor at the job site for installation by the Contractor
    - 4. Provide – Shall mean furnished and installed in place by the Contractor

**ARTICLE 2—BIDDING DOCUMENTS**

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder’s responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

- 2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder register as a plan holder with the Issuing Office at such website and obtain a complete set of the Bidding Documents from such website. Bidders may rely on that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.04 Bidder may register as a plan holder and obtain complete sets of Bidding Documents, in the number and format stated in the Advertisement or invitation to bid, from the Issuing Office. Bidders may rely on that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.05 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.
- 2.06 *Electronic Documents*
- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.
1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.
- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

### **ARTICLE 3—QUALIFICATIONS OF BIDDERS**

- 3.01 Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:
- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.



- B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
  - C. Bidder's state or other contractor license number, if applicable.
  - D. Subcontractor and Supplier qualification information.
  - E. Other required information regarding qualifications.
- 3.02 A Bidder's failure to submit required qualification information with the bid may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

#### **ARTICLE 4—PRE-BID CONFERENCE**

- 4.01 A pre-bid conference will not be conducted for this Project.

#### **ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE**

##### *5.01 Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

##### *5.02 Existing Site Conditions*

###### *A. Subsurface and Physical Conditions; Hazardous Environmental Conditions*

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:
  - a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
    - 1) Geotechnical Evaluation Report, Braun Intertec (i.e., geotechnical)]
  - b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
  - c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
  - d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion

Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
4. *Geotechnical Report*: The Bidding Documents contain a Geotechnical Report (GDR).
  - a. As set forth in the Supplementary Conditions, the Geotechnical Report describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations (“Baseline Conditions”).
  - b. The Baseline Conditions in the Geotechnical Report are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the Geotechnical Report, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are baselined.
  - c. Nothing in the Geotechnical Report is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.
- B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.
- C. *Adequacy of Data*: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

#### 5.03 *Other Site-related Documents*

- A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A, the following other documents relating to conditions at or adjacent to the Site are known to Owner and made available to Bidders for reference:

1. **NONE**

Owner will make copies of these other Site-related documents available to any Bidder on request.

- B. Owner has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.
- C. The other Site-related documents are not part of the Contract Documents.
- D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.
- E. No other Site-related documents are available.

5.04 *Site Visit and Testing by Bidders*

- A. Bidder is required to visit the Site during normal working hours and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.
- B. Bidders visiting the Site are required to arrange their own transportation to the Site.
- C. All access to the Site other than during a regularly scheduled Site visit must be coordinated through the following Owner or Engineer contact for visiting the Site: [Susan.Hazelett@ApexEngGroup.com](mailto:Susan.Hazelett@ApexEngGroup.com) or 701-224-3101. Bidder must conduct the required Site visit during normal working hours.
- D. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- E. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.
- F. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- G. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.06 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for

such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

## ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

### 6.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder’s examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

## ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:
  - A. **Susan Hazelett, PE**, Apex Engineering Group, Inc., 600 South 2<sup>nd</sup> Street, Suite 145, Bismarck, ND 58504; [Susan.Hazelett@ApexEngGroup.com](mailto:Susan.Hazelett@ApexEngGroup.com).
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven (7) days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

## ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security **in a separate envelope** made payable to Owner in an amount of five percent (5%) of Bidder’s maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner’s

damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.

- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven (7) days after the Bid opening.

#### **ARTICLE 9—CONTRACT TIMES**

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.
- 9.02 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

#### **ARTICLE 10—SUBSTITUTE AND "OR EQUAL" ITEMS**

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract. The procedure for submission of any such application by the Contractor and consideration by the Engineer is set forth in the General Conditions and may be supplemented in Division 01.
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

#### **ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

- 11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 11.02 The Bidder must submit to Owner a list of the Subcontractors/Suppliers proposed for the Work as outlined in Specification Section 00410.
- 11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder's Bid price will be increased (or

decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

## **ARTICLE 12—PREPARATION OF BID**

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
  - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.” If not specifically listed as “optional”, Bidder must enter an amount for each Alternate.
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 12.06 A Bid by an individual must show the Bidder’s name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure. Bidder's state contractor license number, must also be shown on the Bid Form.

#### **ARTICLE 13—BASIS OF BID**

##### 13.01 *Lump Sum*

- A. Bidders must submit a Bid on a lump sum basis as set forth in the Bid Form.

##### 13.02 *Allowances*

- A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

#### **ARTICLE 14—SUBMITTAL OF BID**

- 14.01 The Bidding Documents include one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 2 of the Bid Form.

#### **Items Listed Below are Required in Separate Bid Security Envelope (Bid Envelope will NOT be opened without these documents).**

- A. Required Bid Security (5%)
- B. North Dakota Contractor's License valid 10 Days before bid opening
- C. MBE/WBE Subcontractor Solicitation Information Form.

#### **Items Listed Below are Required in the Bid Envelope with Bid Form (Section 00300)**

- D. Bidder's List of Major Equipment Suppliers (Section 00400)
- E. Bidder's Subcontractor/Supplier List (Section 00410)
- F. Bidder's Qualification Statement (Section 00420)
- H. Signed Bid Form
- I. Certification Regarding Debarment, Suspension and Other Responsibility Matters
- J. Corporate Resolution

#### **Receipt of all Addenda issued during bidding shall be acknowledged by the Bidder on the outside of the Bid Envelope. Failure to acknowledge any Addenda issued during bidding shall render the Bid invalid.**

- 14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the location designated in the Advertisement.
- 14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

#### **ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID**

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

#### **ARTICLE 16—OPENING OF BIDS**

- 16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

#### **ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

- 17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

#### **ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes



of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Base Bid.

18.05 *Evaluation of Bids*

A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

**ARTICLE 19—BONDS AND INSURANCE**

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

**ARTICLE 20—SIGNING OF AGREEMENT**

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

**ARTICLE 21 – INSTRUCTION FOR COMPLETING MBE/WBE SUBCONTRACTOR SOLICITATION SHEET**

21.01 The MBE/WBE Subcontractor Solicitation Information Sheet shall be submitted with the Bid. Any Bidder who fails to include the complete and sign the MBE/WBE Subcontractor Solicitation Information Sheet shall be considered non-responsive.

21.02 All Bidders shall solicit quotes from at least three (3) certified MBE and three (3) certified WBE subcontractors and include the required information regarding each solicitation on the MBE/WBE Subcontractor Solicitation Information Sheet.

21.03 The North Dakota Department of Environmental Quality will review the two lowest Bidder's information sheets to determine if the Bidders have made adequate effort to meet the MBE/WBE

goals stated in the Contract Documents. The NDDH will not authorize award of the contract if the MBE/WBE goal is not met due to inadequate solicitation effort by the Bidders prior to the Bid opening.

- 21.04 The Bidders shall include similar information on the MBE/WBE Subcontractor Solicitation Information Sheet for non-MBE/WBE subcontractors from which quotes have been received for the same work offered to the MBE/WBE subcontractors.
- 21.05 If the Bidder has complied with the above solicitation requirements, the Bidder is not required to accept certified MBE/WBE subcontractor quotes if their quotes are significantly higher than non-MBE/WBE subcontractors for the same work.

**END OF SECTION**

**Fessenden Wastewater Lagoon Improvements**  
**City of Fessenden, ND**  
**Apex Project # 24.457.0150**

**Section 00300 - BID FORM**

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

*City of Fessenden*  
*P.O. Box 42*  
*600 Railway Street South*  
*Fessenden, ND 58438*

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents and to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER’S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-4.02 as containing reliable "technical data," and (2) reports and drawings of Hazardous

Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."

- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- J. Bidder is aware this project must comply with Title 40 CFR Part 33 – Participation by Disadvantaged Business Enterprises in the United State Environmental Protection Agency Programs. The requirements for bidders and contractors under this regulation concern utilization of Minority Business Enterprises (MBE), Women's Business Enterprises (WBE), and Small Business Enterprises (SBE) and are explained in the specifications.
- K. Bidder is aware the Contractor is required to comply with the President's Executive Order No. 11246, as amended. The requirements for bidders and contractors under this order are explained in the specifications.
- L. Bidder is aware this project follows the requirements for American Iron and Steel as mandated by Public Law 113-76, Consolidated Appropriation Act, 2014.
- M. Bidder is aware this project requires Davis-Bacon wage rate determination as listed in the specifications.

#### **ARTICLE 4 – BIDDER'S CERTIFICATION**

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
  - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
  - 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  - 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
  - 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**ARTICLE 5 – BASIS OF BID**

- 5.01 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Base Bid plus any Alternates that are deemed in the best interest of the City. The City may select none, all or any combination of Alternates that is deemed to be in the City’s best interest.
- 5.02 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

**Bid Schedule of Prices – Lump Sum**

	Description of Item	Bid Amount (Fill in US Dollars or No Bid)
<b>A.</b>	<b>General Construction Contract</b>	
	Reconstruction of the Fessenden Wastewater Lagoons as shown in the contract documents.	\$ _____
	<b>Total General Construction Bid Amount</b>	\$ _____
<b>GENERAL CONSTRUCTION Total Lump Sum Base Bid Amount in Words:</b> _____		

**ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work to make the system operational shall be Substantially Completed by **October 18, 2025**, and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before **June 30, 2026**.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

## ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

**Required in Separate Bid Security Envelope (Bid Envelope will not be opened without these documents):**

- A. Required Bid security (5%)
- B. North Dakota Contractor's License valid 10 days before bid opening
- C. MBE/WBE Subcontract Solicitation Information Form

**Required in Bid Envelope with Bid Form (Section 00300):**

- D. Bidder's List of Major Equipment Suppliers (Section 00400)
- E. Bidder's Subcontractor/Supplier List (Section 00410)
- F. Bidder's Qualification Statement (Section 00420)
- G. Certification Regarding Debarment, Suspension and Other Responsibility Matters
- H. Corporate Resolution

**Acknowledgement of Addenda on Bid Envelope**

## ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

**BID SUBMITTAL**

BIDDER: *[Indicate correct name of bidding entity]*

\_\_\_\_\_

By:  
*[Signature]* \_\_\_\_\_

*[Printed name]* \_\_\_\_\_  
*(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest:  
*[Signature]* \_\_\_\_\_

*[Printed name]* \_\_\_\_\_

Title: \_\_\_\_\_

Submittal Date: \_\_\_\_\_

Address for giving notices:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Contact Name and e-mail address: \_\_\_\_\_  
\_\_\_\_\_

Bidder's License No.: \_\_\_\_\_  
*(where applicable)*

**NOTE TO USER:** *Use in those states or other jurisdictions where applicable or required.*

**Fessenden Wastewater Lagoon Improvements  
Fessenden, North Dakota  
Apex Project # 24.457.0150**

**Section 00400 - BIDDER'S LIST OF MAJOR EQUIPMENT SUPPLIERS**

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The undersigned hereby submits, as a part of this Bid, the names of those manufacturers supplying major pieces of equipment for this Project. The names of Major Equipment Suppliers to be used have been listed in the column below titled 'Manufacturer'. Quotes from these Suppliers have been listed in the column below titled 'Manufacturer's Equipment Quote'. Upon Contract award, these Manufacturers/Suppliers shall be used to furnish the listed equipment.

Substitutions or Product Options shall be permitted only if the named equipment does not conform to the Contract Documents; the Supplier is unable to meet the delivery requirements of the Contract Documents; the Supplier is slow to act in complying with the requirements of the Contract Documents; 'Or-Equal' products are listed in the individual specification sections; or for other reasons consistent with the General Conditions.

Substitutions or Product Options shall be submitted in accordance with Section 01630 of these Specifications. Acceptance by both Owner and Engineer is required for any substitute equipment items and is not guaranteed. Acceptance shall be confirmed by Change Order. Acceptance of any substitute equipment items shall not relieve the Contractor from the responsibility of conforming with the Specifications. Final acceptance of all equipment will be based on the Contract Documents.

Failure to furnish all information required may be cause for rejection of this Bid.

Spec Section	Major Equipment Item	Manufacturer	Or – Equal	Manufacturer's Equipment Quote

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Authorized Signature



**Fessenden Wastewater Lagoon Improvements**

**Fessenden, North Dakota**

**Apex Project # 24.457.0150**

**Section 00410 - BIDDER'S SUBCONTRACTOR/SUPPLIER LIST**

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The undersigned hereby submits, as part of this Bid, this list of all subcontractors and the nature of Work or products to be supplied by each. This list is only inclusive of the Subcontractors/Suppliers that will be completing Work or supplying materials totaling 1% or more of the total Bid.

<b>Subcontractor/Supplier</b>	<b>Address Phone Number</b>	<b>Nature of Work/Supply</b>	<b>Amount (\$)</b>

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Authorized Signature

**Fessenden Wastewater Lagoon Improvements  
Fessenden, North Dakota  
Apex Project # 24.457.0150**

**Section 00420 - BIDDER'S QUALIFICATION STATEMENT**

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The undersigned hereby certifies, as a part of this Bid, that we or the subcontractor named below maintain a permanent place of business; have experience with projects of similar size and type; and have the financial resources to properly execute this Contract.

As evidence of this experience, the following projects are submitted for review.

1. Five (5) projects completed within the last five (5) years that are similar in size and type.
2. Final construction costs of the five (5) referenced projects.
3. Contract dates of the five (5) referenced projects.
4. Project references, including Owner contact information and project details.

<b>No.</b>	<b>Owner Information</b>	<b>Construction Cost</b>	<b>Contract Start and Completion Dates</b>	<b>Reference Phone Number</b>	<b>Detailed Project Information</b>
1					
2					
3					
4					
5					

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Authorized Signature

## BID BOND (PENAL SUM FORM)

<b>Bidder</b> Name: Address <i>(principal place of business)</i> :	<b>Surety</b> Name: Address <i>(principal place of business)</i> :
<b>Owner</b> Name: <b>City of Fessenden, ND</b> Address <i>(principal place of business)</i> : <b>602 Railway Street South</b> <b>Fessenden, ND 58438</b>	<b>Bid</b> Project <i>(name and location)</i> : <b>Fessenden Wastewater Lagoon Improvements</b> <b>Fessenden, North Dakota</b>  Bid Due Date: <b>January 30, 2024</b>
<b>Bond</b> Penal Sum: <b>[Amount]</b> Date of Bond: <b>[Date]</b>	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
  - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2. All Bids are rejected by Owner, or
  - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

# AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between City of Fessenden (“Owner”) and [name of contracting entity] (“Contractor”).

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

## ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Reconstruction of the wastewater lagoons.

## ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **Fessenden Wastewater Lagoon Improvements**

## ARTICLE 3—ENGINEER

3.01 The Owner has retained **Apex Engineering Group, Inc.**, (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by **Apex Engineering Group, Inc.**

## ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Dates*

A. The Work will be substantially complete on or before **October 18, 2025**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **June 30, 2026**.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. *Substantial Completion*: Contractor shall pay Owner **\$1000.00** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
  2. *Completion of Remaining Work*: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **\$1000.00** for each day that expires after such time until the Work is completed and ready for final payment.
  3. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.
- B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

#### 4.06 *Special Damages*

- A. Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.
- C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

### **ARTICLE 5—CONTRACT PRICE**

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:
- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

### **ARTICLE 6—PAYMENT PROCEDURES**

#### 6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

## 6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the **15th** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
    - a. Ninety (90) percent of the value of the Work completed (with the balance being retainage).
      - 1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
    - b. Ninety (90) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to ninety five (95) percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **one hundred (100)** percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

## 6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

## 6.04 *Consent of Surety*

- A. Owner will not make final payment or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

## 6.05 *Interest*

- A. All amounts not paid when due will bear interest at the maximum rate allowed by law in the location of the project.

## **ARTICLE 7—CONTRACT DOCUMENTS**

### 7.01 *Contents*

- A. The Contract Documents consist of all of the following:

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EJCDC® 00520, Agreement between Owner and Contractor for Construction Contract (Stipulated Price).  
Copyright® 2018 National Society of Professional Engineers, American Council of Engineering Companies,  
and American Society of Civil Engineers. All rights reserved.

1. This Agreement.
  2. Bonds:
    - a. Performance bond (together with power of attorney).
    - b. Payment bond (together with power of attorney).
  3. General Conditions.
  4. Supplementary Conditions.
  5. Specifications as listed in the table of contents of the project manual (not attached but incorporated by reference).
  6. Drawings (not attached but incorporated by reference) consisting of 9 sheets with each sheet bearing the following general title: **Fessenden Wastewater Lagoons**.
  7. Addenda (numbers **[number]** to **[number]**, inclusive).
  8. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages XX to XX, inclusive).
  9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    - a. Notice to Proceed.
    - b. Work Change Directives.
    - c. Change Orders.
    - d. Field Orders.
    - e. Warranty Bond, if any.
- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

## **ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS**

### **8.01 Contractor's Representations**

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
  2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.



4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

#### 8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
  1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner,

(b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### 8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary Conditions.

### **ARTICLE 9— MISCELLANEOUS**

#### 9.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

#### 9.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

#### 9.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

#### 9.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.



IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on **[indicate date on which Contract becomes effective]** (which is the Effective Date of the Contract).

Owner:

Contractor:

\_\_\_\_\_  
*(typed or printed name of organization)*

\_\_\_\_\_  
*(typed or printed name of organization)*

By: \_\_\_\_\_  
*(individual's signature)*

By: \_\_\_\_\_  
*(individual's signature)*

Date: \_\_\_\_\_  
*(date signed)*

Date: \_\_\_\_\_  
*(date signed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

*(If [Type of Entity] is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest: \_\_\_\_\_  
*(individual's signature)*

Attest: \_\_\_\_\_  
*(individual's signature)*

Title: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Address for giving notices:

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Designated Representative:

Designated Representative:

Name: \_\_\_\_\_  
*(typed or printed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Address:

Address:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Email: \_\_\_\_\_

*(If [Type of Entity] is a corporation, attach evidence of authority to sign. If [Type of Entity] is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)*

License No.: \_\_\_\_\_  
*(where applicable)*

State: \_\_\_\_\_

## PERFORMANCE BOND

<p><b>Contractor</b></p> <p>Name: _____</p> <p>Address (<i>principal place of business</i>): _____</p>	<p><b>Surety</b></p> <p>Name: _____</p> <p>Address (<i>principal place of business</i>): _____</p>
<p><b>Owner</b></p> <p>Name: <b>City of Fessenden, ND</b></p> <p>Mailing address (<i>principal place of business</i>):</p> <p><b>602 Railway Street South</b></p> <p><b>Fessenden, ND 58438</b></p>	<p><b>Contract</b></p> <p>Description (<i>name and location</i>):</p> <p><b>Fessenden Wastewater Lagoon Improvements</b></p> <p><b>Fessenden, ND</b></p> <p>Contract Price: _____</p> <p>Effective Date of Contract: <b>[Date from Contract]</b></p>
<p><b>Bond</b></p> <p>Bond Amount: <b>[Amount]</b></p> <p>Date of Bond: <b>[Date]</b></p> <p><i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form:</p> <p><input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
  - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
  - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
  - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
  - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
  - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
  - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
  - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- 6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
- 7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
  - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
  - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
  - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
- 9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
- 10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
  - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
  - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**



## PAYMENT BOND

<b>Contractor</b> Name: Address <i>(principal place of business)</i> :	<b>Surety</b> Name: Address <i>(principal place of business)</i> :
<b>Owner</b> Name: <b>City of Fessenden, ND</b> Mailing address <i>(principal place of business)</i> : <b>602 Railway Street South</b> <b>Fessenden, ND 58438</b>	<b>Contract</b> Description <i>(name and location)</i> : <b>Fessenden Wastewater Lagoon Improvements</b> <b>Fessenden, ND</b>  Contract Price: <b>[Amount, from Contract]</b> Effective Date of Contract: <b>[Date, from Contract]</b>
<b>Bond</b> Bond Amount: <b>[Amount]</b> Date of Bond: <b>[Date]</b> <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
  - 5.1. Claimants who do not have a direct contract with the Contractor
    - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2. Pay or arrange for payment of any undisputed amounts.
  - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
  - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
    - 16.1.1. The name of the Claimant;
    - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
    - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
    - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
  - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
  - 16.1.7. The total amount of previous payments received by the Claimant; and
  - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By



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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*
    - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

- requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
  - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
  - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
  12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
  13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
  14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
  15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
  16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
  17. *Cost of the Work*—See Paragraph 13.01 for definition.
  18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
  19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
  20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
  21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
  - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
  - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
  - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor’s plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
  - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
  - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.



## 1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
  2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2—PRELIMINARY MATTERS**

### **2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance***

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### **2.02 *Copies of Documents***

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

### **2.03 *Before Starting Construction***

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
  - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  - 2. a preliminary Schedule of Submittals; and
  - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
  - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
  - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

### 3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
  - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
  - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

### 3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

## **ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK**

### 4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

### 4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

### 4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal weather conditions;
  - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
  - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
  2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
  3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
  2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
  3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
  4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
  5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

## **ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.



- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

## 5.02 *Use of Site and Other Areas*

### A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
  - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
  2. is of such a nature as to require a change in the Drawings or Specifications;
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
  - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
  - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
- a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
  - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
  - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
  2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
  4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
  2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
  3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
  4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
  - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
  - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
  3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
  4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

#### 5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

- of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 6—BONDS AND INSURANCE**

### **6.01 *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or



Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

#### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

- Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.
- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
  - F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
  - G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
  - H. Contractor shall require:
    - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
    - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
  - I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
  - J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
  - K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
  - 1. include at least the specific coverages required;
  - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
  - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
  - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
  - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
  - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
  - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
  - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

#### 6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

#### 6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
  2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

#### 7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
      - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
  - 3) has a proven record of performance and availability of responsive service; and
  - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

#### 7.06 Substitutes

- A. *Contractor's Request; Governing Criteria:* Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
  2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.



3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
  - a. will certify that the proposed substitute item will:
    - 1) perform adequately the functions and achieve the results called for by the general design;
    - 2) be similar in substance to the item specified; and
    - 3) be suited to the same use as the item specified.
  - b. will state:
    - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
    - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
    - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
  - c. will identify:
    - 1) all variations of the proposed substitute item from the item specified; and
    - 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

### 7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
  - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determine and verify:
    - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
    - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
  - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
  2. *Samples*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

*D. Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

*E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
  - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
  - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
  - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.



- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
  2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

**7.17 Contractor's General Warranty and Guarantee**

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
  1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
  2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
  1. Observations by Engineer;
  2. Recommendation by Engineer or payment by Owner of any progress or final payment;
  3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. Use or occupancy of the Work or any part thereof by Owner;
  5. Any review and approval of a Shop Drawing or Sample submittal;
  6. The issuance of a notice of acceptability by Engineer;
  7. The end of the correction period established in Paragraph 15.08;
  8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
  - 1. Checking for conformance with the requirements of this Paragraph 7.19;
  - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
  - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

## **ARTICLE 8—OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

#### 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
  - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
  - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9—OWNER'S RESPONSIBILITIES**

### **9.01 *Communications to Contractor***

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### **9.02 *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

### **9.03 *Furnish Data***

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### **9.04 *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
  - B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
  - C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *Limitations on Owner's Responsibilities*
- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
  - B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

## ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

### 10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

### 10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

### 10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

### 10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.



## ARTICLE 11—CHANGES TO THE CONTRACT

### 11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

### 11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

### 11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
  - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
  - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

#### 11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

#### 11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
  2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
  3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
1. A mutually acceptable fixed fee; or
  2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
    - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
    - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
    - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
    - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

#### 11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

#### 11.09 *Change Proposals*

A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

#### B. *Change Proposal Procedures*

1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
  - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
  - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

#### 11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### **ARTICLE 12—CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
  1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
  3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
  4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
  - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **13.01 *Cost of the Work***

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
  3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
  4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
  5. Other costs consisting of the following:
    - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
    - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
- 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
- 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.



- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
  - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
  - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
    - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
    - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

### 13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance:* Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

### 13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
  - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

**ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK**

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  3. by manufacturers of equipment furnished under the Contract Documents;
  4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

**14.07 Owner May Correct Defective Work**

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

**ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

**15.01 Progress Payments**

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
  - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work;
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

**D. *Payment Becomes Due***

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

**E. *Reductions in Payment by Owner***

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;



- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. The Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. The Contract Price has been reduced by Change Orders;
  - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
  - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
  - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

**15.02 Contractor's Warranty of Title**

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

**15.03 Substantial Completion**

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 15.06 *Final Payment*

##### A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

#### 15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such adjacent areas;
  - 2. correct such defective Work;
  - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## **ARTICLE 17—FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
  2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
  2. agree with the other party to submit the dispute to another dispute resolution process; or
  3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18—MISCELLANEOUS**

### **18.01 *Giving Notice***

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
  2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
  3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

### **18.02 *Computation of Times***

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.



18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**Fessenden Wastewater Lagoon Improvements**

**Fessenden, ND**

**Apex Project # 24.457.0150**

**Section 00800 – SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION  
CONTRACT**

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These Supplementary Conditions amend or supplement EJCDC® C-700 (Specification Section 00700), Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

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**SC-1.01**     *Defined Terms*

Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

**Final Completion** – The Work is complete when it is ready for final payment as established by the Engineer’s written recommendation of final payment as set forth in Paragraph 15.06.

**Plan Quantity** — Contract bid items (within the Schedule of Prices) which have a “(P)” designation will be paid by the plan quantity. Plan quantity shall be subject to the definition, terms, and conditions stated in Section 1901 of the 2020 Edition of the Minnesota Department of Transportation (MnDOT) Standard Specifications for Construction.

**Procurement Vendor** — The corporation, company, partnership, firm, or individual who has entered into a contract with Owner outside the scope of these Contract Documents, to furnish materials and equipment for this Project.

**SC-2.02**     Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

A. Owner shall furnish to Contractor up to one (1) full-sized and two (2) half-sized printed or hard copies of the Drawings, three printed copies of the Project Manual, and one (1) set in electronic portable document format (PDF). Additional copies will be furnished upon request at the cost of reproduction. Contractor shall provide hard copy equipment submittals and operation and maintenance manuals in addition to submitting these documents electronically per the contract requirements for web-based construction document management.

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

B. *Electronic Documents Protocol*: The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol (“EDP” or “Protocol”) for exchange of electronic transmittals.

1. *Basic Requirements*

- a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.
- b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.
- c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
- d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.
- e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party’s use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.
- f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

- a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions (“System Infrastructure”) at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.

- 1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is 20 MB. Attachments larger than that may be exchanged using large file transfer functions or physical media.
  - 2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.
- b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology (“IT”) for maintaining operations of its System Infrastructure during the Project, including coordination with the party’s individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.
  - c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
  - d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.
  - e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.
  - f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.
  - g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the

Electronic Document or use an alternative delivery method to complete the communication.

C. *Software Requirements for Electronic Document Exchange; Limitations*

1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.
  - a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.
3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth herein to this EDP, including software versions, if listed.

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Requests for Information (RFIs) and responses to RFIs	Email w/ Attachment	PDF	(2)
a.4	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment or Project Website or LFE	PDF	
a.5	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or Project Website or LFE	PDF	
a.6	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or Project Website or LFE	DWG	
a.7	Correspondence, reports, and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or Project Website or LFE	DOC	
a.8	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or Project Website or LFE	EXC	
a.9	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or Project Website or LFE	DB	

Notes

(1) All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.

(2) Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.

Key

Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)
PDF	Portable Document Format readable by Adobe® Acrobat Reader, latest Version
DWG	Autodesk® AutoCAD .dwg format Version
DOC	Microsoft® Word .docx format Version
EXC	Microsoft® Excel .xls or .xml format Version
DB	Microsoft® Access .mdb format Version

SC-4.03 Add the following after Paragraph 4.03.A

- A. Contractor shall protect all property monuments (pins) as well as construction stakes and marks.

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely.

Report Title	Date of Report	Technical Data
Geotechnical Evaluation Report, Braun Intertec	10/28/24	Geotechnical Report

- F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely.

Drawings Title	Date of Drawings	Technical Data
Not Applicable		

- G. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at Apex Engineering Group, Inc., 600 South 2<sup>nd</sup> Street, Suite 145, Bismarck, ND during regular business hours, or may request copies from Engineer at the cost of reproduction.

Copies of reports and drawings referenced above are also available electronically upon written request to the Engineer. These reports and drawings identified in SC-5.03.E and SC-5.03.F are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in Paragraph 5.03.C of the General Conditions has been identified and established in Paragraph 5.03 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

The reports and drawings identified above are not part of the Contract Documents, but the “technical data” contained therein upon which Contractor may rely, as expressly identified and established above, are incorporated in the Contract Documents by reference. Contractor is not entitled to rely upon any other information and data known to or identified by Owner or Engineer.

SC-5.05 Delete 5.05.A and replace with the following:

*Underground Facilities*

Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others. The subsurface utility information in these contract documents is Utility Quality Level D in accordance to the guideline of CI/ASCE 38-02 entitled, "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data"; and the costs of all the following are included in the Contract Price, and Contractor shall have full responsibility for:

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

Report Title	Date of Report	Technical Data
Not Applicable		

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
Not Applicable		

Copies of reports and drawings referenced above are also available electronically upon written request to the Engineer. These reports and drawings identified in SC-5.06.A.4. and SC-5.06.A.5. are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 5.06.B of the General Conditions has been identified and established in Paragraph 5.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

The reports and drawings identified above are not part of the Contract Documents, but the "technical data" contained therein upon which Contractor may rely, as expressly identified and established above, are incorporated in the Contract Documents by reference. Contractor is not entitled to rely upon any other information and data known to or identified by Owner or Engineer.

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® 00610, Performance Bond (2018 edition).
2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® 00615, Payment Bond (2018 edition).



- SC-6.02 Add the following paragraph immediately after Paragraph 6.02.H.2.
3. Contractor is solely responsible for ensuring Subcontractors and Suppliers comply with the above provisions at all times. Contractor shall document and maintain all worker's compensation and insurance information provided by their Subcontractors and Suppliers and will submit documentation to the Owner and/or Engineer upon request.

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- D. *Other Additional Insureds*: As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: **N/A**.
- E. *Workers' Compensation and Employer's Liability*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

<b>Workers' Compensation and Related Policies</b>	<b>Policy limits of not less than:</b>
<b>Workers' Compensation</b>	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
<b>Employer's Liability</b>	
Each accident	\$1,000,000
Each employee	\$1,000,000
Policy limit	\$1,000,000
<b>Stop-gap Liability Coverage</b>	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	NA

- F. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
  2. damages insured by reasonably available personal injury liability coverage, and
  3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial

general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.
    - a. Such insurance must be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.
  3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
  4. Underground, explosion, and collapse coverage.
  5. Personal injury coverage.
  6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
  7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
  2. Any exclusion for water intrusion or water damage.
  3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
  4. Any exclusion of coverage relating to earth subsidence or movement.
  5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
  6. Any limitation or exclusion based on the nature of Contractor’s work.
  7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- I. *Commercial General Liability—Minimum Policy Limits*

<b>Commercial General Liability</b>	<b>Policy limits of not less than:</b>
General Aggregate	\$2,000,000

<b>Commercial General Liability</b>	<b>Policy limits of not less than:</b>
Products—Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

- J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

<b>Automobile Liability</b>	<b>Policy limits of not less than:</b>
<b>Bodily Injury</b>	
Each Person	\$1,000,000
Each Accident	\$1,000,000
<b>Property Damage</b>	
Each Accident	\$2,000,000
<b>or</b>	
<b>Combined Single Limit</b>	
Combined Single Limit (Bodily Injury and Property Damage)	\$2,000,000

- K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

<b>Excess or Umbrella Liability</b>	<b>Policy limits of not less than:</b>
Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000

- L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein..

- M. *Contractor’s Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance must be maintained for no less than three years after final completion.

<b>Contractor’s Pollution Liability</b>	<b>Policy limits of not less than:</b>
Each Occurrence/Claim	NA
General Aggregate	NA

- N. *Contractor's Professional Liability Insurance*: If Contractor will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

<b>Contractor's Professional Liability</b>	<b>Policy limits of not less than:</b>
Each Claim	NA
Annual Aggregate	NA

6.04 Delete Sections 6.04, 6.05 & 6.06 in its entirety. Contractor is not required to purchase Builder's Risk Insurance.

SC-7.03 Add the following new subparagraphs immediately after Paragraph 7.03.C:

1. Regular working hours will be **7 AM to 7 PM, Monday through Friday.**
2. Owner's legal holidays are **New Year's Day, Martin Luther King Jr. Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving, and Christmas Day.**

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

- D. Owner shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.09 Revise 7.09A to read as follows:

- A. Owner has applied and paid for permits listed below. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all other construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work
- B. The Owner has applied/obtained and paid for the following permits:
1. North Dakota Department of Environmental Quality
  2. Wells County Floodplain Management

3. Army Corp of Engineers

- C. The Contractor is responsible for complying with all requirements of Owner or Contractor obtained permits. Permits not included in the contract documents are available for review at the Engineer's office upon request.
- D. The Contractor is responsible for obtaining, paying for any fees related to, and complying with requirements of all other permits that may be required for the work including but not limited to an NPDES/SDS Stormwater Permit for Construction Activity.

SC-7.20 Add the following new paragraphs immediately after Paragraph 7.19:

7.20 Assignment of Procurement Vendor Contracts:

- A. Following award of the general construction contract, Owner will assign all or part of the procurement vendor contract(s) to the general construction contractor as stipulated in the Agreement.
- B. Contractor's Continuing Obligation: Contractor's obligation to perform services in connection herewith will be in accordance with Contract Documents and free from defects.

SC-8.02 Add the following new Paragraph 8.02.C immediately after Paragraph 8.02.B:

- C. Owner intends to contract with others for the performance of other work at or adjacent to the Site.
  - 1. The Contractor shall have authority and responsibility for coordination of the various contractors and work forces at the Site. The Contractor shall keep the Engineer well informed of progress, milestones, and schedule that relate to the work of others performing work at the site.
  - 2. The following other work will be performed at the site:
    - a. NA
    - b. Other private utilities (gas, communications, etc.) may also be required to upgrade or relocate facilities to accommodate the Contractor's work. The contractor shall coordinate such activities and assume adequate time within the project schedule to allow for this work.
  - 3. The extent of such authority and responsibilities is limited to the notification, coordination, and communicating with others as it relates to their work. The Contractor shall not direct or have control over other work. The Contractor shall immediately notify the Engineer if the work of others will cause delay or other adverse impact to the project, beyond what could be reasonably assumed or expected with the nature of Work.

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of the Engineer, and will confer with the Engineer regarding RPR's actions. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. RPR shall generally communicate with the Owner only with the knowledge of and under the direction of the Engineer. The RPR will:
1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
  2. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by the Contractor and consult with the Engineer concerning acceptability.
  3. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
  4. *Liaison*
    - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
    - c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
    - d. *Interpretation of Contract Documents:* Report to the Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to the Contractor clarifications and interpretations as issued by the Engineer.
    - e. *Modifications:* Consider and evaluate the Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with the RPR's recommendations, if any, to the Engineer. Transmit to the Contractor in writing decisions as issued by the Engineer.
  4. *Review of Work; Defective Work*
    - a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
    - b. Observe whether any Work in place appears to be defective.
    - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
    - d. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally

to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

5. *Inspections, Tests, and System Start-ups*

- a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
- b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
- c. Verify that tests, equipment, and system start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel and that the Contractor maintains adequate records thereof.
- d. Observe, record, and report to the Engineer appropriate details relative to the test procedures and system start-ups.

6. *Records*

- a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures, and send copies to the Engineer.
- b. Record names, addresses, fax numbers, email addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- c. Maintain records for use in preparing Project documentation.

7. *Reports*

- a. Furnish to the Engineer periodic reports as required of progress of Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to the Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from the Contractor.
- c. Immediately notify the Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

8. *Payment Requests:* Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to the Engineer, noting particularly the relationship of the payment requested with the

Schedule of Values, Work completed, and materials and equipment delivered at the Site by not incorporated in the Work.

9. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operations and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by the Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to the Engineer for review and forwarding to the Owner prior to payment for that part of the Work.
7. *Completion*
  - a. Participate in Engineer's visits regarding Substantial Completion.
  - b. Assist in the preparation of a punch list of items to be completed or corrected.
  - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
  - d. Observe whether items on the final punch list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- D. The RPR will not:
  1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
  2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
  3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
  4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences, or procedures of construction.
  5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
  6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
  7. Accept Shop Drawing or Sample submittals from anyone other than the Contractor.
  8. Authorize Owner to occupy the Project in whole or in part.

SC-13.01 Supplement Paragraph 13.01.B.5.c.(2) by adding the following sentence:

The equipment rental rate book that governs the included costs for the rental of machinery and equipment owned by Contractor (or a related entity) under the Cost of the Work provisions of this Contract is the most current edition of the Rental Rate Blue Book as published by Primedia Information, Inc.



- SC-13.01 Supplement Paragraph 13.01.C.2 by adding the following definition of small tools and hand tools:
- a. For purposes of this paragraph, “small tools and hand tools” means any tool or equipment whose current price if it were purchased new at retail would be less than \$1,000.
- SC-13.01 Add the following to Paragraph 13.01
- E. Additional compensation or changes to unit prices will not be made for escalation of fuel prices.
- SC-13.03 Delete Paragraph 13.03.E in its entirety and insert the following in its place:
- E. *Adjustments in Unit Price*
    1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
      - a. the extended price of a particular item of Unit Price Work amounts to ten (10) percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than **ten (10)** percent from the estimated quantity of such item indicated in the Agreement; and
      - b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
    2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
    3. Adjusted unit prices will apply to all units of that item.
    4. Additional compensation or changes to unit prices will not be made for escalation of fuel prices.
- SC-14.02 Add the following to 14.02 following Paragraph F:
- G. The Contractor shall pay for tests and associated costs to the Owner that fail to meet the specified standards. All costs associated with failing tests shall be deducted from the contract and withheld from following payments which may be due to the contractor.
- SC-15.01 Delete 15.01.D and replace with the following:
- D. Payment Becomes Due
    1. Thirty (30) days after the presentation of the Application for Payment to the Owner with the Engineer’s recommendations and funding agency concurrence, the amount recommended will (subject to the provision of Paragraph 14.02.D) become due and will be paid by the Owner to the Contractor.

2. Contractor is required to make prompt payments to subcontractors in accordance with State Statutes

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

#### 17.02 *Arbitration*

- A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of \$100,000 or less will be settled in accordance with the American Arbitration Association's supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction. **The arbitration hearing shall be held in the City of Fessenden, and State of North Dakota.**
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.
- C. **The arbitration shall be conducted and decided by one arbitrator who is a retired judge or a lawyer with at least 15 years of experience and who is mutually agreeable to the parties.** Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.
- D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.
- E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.
- F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be

required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

- G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
  - 1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;
  - 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;
  - 3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and
  - 4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.
- H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

**END OF SECTION**



**Fessenden Wastewater Lagoon Improvements**  
**City of Fessenden, North Dakota**  
**Apex Project# 22.118.0177**

**Section 00820 – CWSRF Requirements**

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## MEMORANDUM

**TO:** City and Consulting Engineers

**FROM:** Elizabeth Tokach Duran, P.E.  
CWSRF Program Manager  
Division of Municipal Facilities  
701-328-5256  
[etokachduran@nd.gov](mailto:etokachduran@nd.gov)

Shannon Fisher, P.E.  
DWSRF Program Manager  
Division of Municipal Facilities  
701-328-5220  
[smfisher@nd.gov](mailto:smfisher@nd.gov)

**RE:** Clean Water and Drinking Water State Revolving Fund (SRF) Projects

**DATE:** August 2024

The required federal language to be included in bid advertisements and specifications for SRF projects has been revised. Effective immediately, the enclosed revised documents must be used for most SRF projects. Please contact the SRF program manager prior to use to verify that the correct project categories are used.

Project requirements are based on the following project categories:

- All CWSRF/DWSRF Projects
- CWSRF Treatment Works and all DWSRF Projects
- SRF Equivalency Projects
- BIL Equivalency and/or BIL Loan Forgiveness Projects

A digital version of the specifications package can be downloaded from our website at:

[https://deq.nd.gov/Publications/MF/CWSRF\\_Specification\\_Package.pdf](https://deq.nd.gov/Publications/MF/CWSRF_Specification_Package.pdf)

## LANGUAGE REQUIRED FOR BIDS

Include in the bid advertisement the following language for all DWSRF and CWSRF treatment works projects:

***Bidders on this work will be required to comply with American Iron and Steel requirements of the Consolidated Appropriations Act, 2014. The requirements for bidders and contractors under this regulation are explained in the specifications.***

***Bidders are required to comply with Davis-Bacon prevailing wage requirements.***

Also include in the bid advertisement the following language for equivalency projects:

***Bidders on this work will be required to comply with Title 40 CFR Part 33– Participation by Disadvantaged Business Enterprises in the United States Environmental Protection Agency Programs. The requirements for bidders and contractors under this regulation concern utilization of Minority Business Enterprises (MBE), Women’s Business Enterprises (WBE), and Small Business Enterprises (SBE) and are explained in the specifications.***

***The goal for MBE is 2% of the total dollar value of the project. The goal for WBE is 3% of the total dollar value of the project. To demonstrate a good faith effort to comply, bidders must include the MBE/WBE subcontractor solicitation form in the bid package.***

***Bidders on this work will be required to comply with the President’s Executive Order No. 11246, as amended. The requirements for bidders and contractors under this order are explained in the specifications.***

***Bidders are required to comply with Build America, Buy America Act requirements.***

Also include in the bid advertisement the following language for Bipartisan Infrastructure Law (BIL) equivalency projects and/or projects with loan forgiveness:

***Bidders are required to comply with Bipartisan Infrastructure Law (BIL) signage requirements.***

CONTRACTOR'S NAME, ADDRESS & TELEPHONE NUMBER

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Return to:

U.S. Department of Labor for OFCCP  
Southwest and Rocky Mountain  
Region Federal Building, Room 840  
525 South Griffin St.  
Dallas, TX 75202

EMPLOYER ID NUMBER OF CONTRACTOR: \_\_\_\_\_

**CONTRACT INFORMATION**

PROJECT AND LOCATION:				
Dollar Amount of Contract	Estimated Start Date	Estimated Completion Date	Contract No.	Geographical Area

**NOTIFICATION OF SUBCONTRACTS AWARDED  
(>\$10,000)**

Subcontractor's Name, Address, & Phone Number	Employer ID Number of Subcontractor	Estimated \$ Amount of Subcontract	Estimated Start Date	Estimated Completion Date



## **DISCOVERY OF ARCHAEOLOGICAL AND OTHER HISTORICAL ITEMS**

In the event of an archaeological find during any phase of construction, the following procedure will be followed:

- (1) Construction shall be halted, with as little disruption to the archaeological site as possible.
- (2) The Contractor shall notify the Owner who shall contact the State Historical Preservation Officer.
- (3) The State Historical Preservation Officer may decide to have an archaeologist inspect the site and make recommendations about the steps needed to protect the site, before construction is resumed.
- (4) The entire event should be handled as expediently as possible in order to hold the loss in construction time to a minimum while still protecting archaeological finds.

A similar procedure should be followed with regard to more recent historical resources. Should any artifacts, housing sites, etc., be uncovered, the same procedure should be followed as for an archaeological find.

In the event archaeological/historical data are evaluated to meet National Register criteria, the Advisory Council on Historic Preservation may be notified and asked to comment.

## **BONDING REQUIREMENTS**

Bonding requirements must meet the minimums established in 2 CFR 200:

- (1) A bid guarantee from each bidder equivalent to five percent of the bid price. The “bid guarantee” must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.
- (2) A performance bond on the part of the contractor for 100 percent of the contract price. A “performance bond” is one executed in connection with a contract to secure fulfillment of all the contractor’s requirements under such contract.
- (3) A payment bond on the part of the contractor for 100 percent of the contract price. A “payment bond” is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and materials in the execution of the work provided for in the contract.

# **WILLIAMS-STEIGER OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970**

## **A. AUTHORITY**

(1) The contractor is subject to the provisions of the Williams-Steiger Occupational Safety and Health Act of 1970.

(2) These construction documents and the joint and several phases of construction hereby contemplated are to be governed, at all times, by applicable provisions of the Federal law(s) , including but not limited to the latest amendment of the following:

a. Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 94-596;

b. Part 1910 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations;

c. Part 1926 - Safety and Health Regulations for Construction, Chapter XVII of Title 29, Code of Federal Regulations.

## **B. SAFETY AND HEALTH PROGRAM REQUIREMENTS**

(1) This project, its prime contractor and its subcontractors, shall at all times be governed by Chapter XVII of Title 29, Code of Federal Regulations, Part 1926 - Safety and Health Regulations for Construction (29 CFR 22801), as amended to date.

(2) To implement the program and to provide safe and healthful working conditions for all persons, general project safety meetings will be conducted at the site at least once each month during the course of construction, by the construction superintendent or his/her designated safety officer. Notice of such meeting shall be issued not less than three (3) days prior, stating the exact time, location, and agenda to be included. Attendance by the owner, architect, general foreman, shop steward(s), and trades, or their designated representatives, witnessed in writing as such, shall be mandatory.

(3) To further implement the program, each trade shall conduct a short gang meeting, not less than once a week, to review project safety requirements mandatory for all persons during the coming week. The gang foreman shall report the agenda and specific items covered to the project superintendent, who shall incorporate these items in his/her daily log or report.

(4) The prime contractor and all subcontractors shall immediately report all accidents, injuries, or health hazards to the owner and architect, or their designated representatives, in writing. This shall not obviate any mandatory reporting under the provisions of the Occupational Safety and Health Act of 1970.

(5) This program shall become a part of the contract documents and the contract between the owner and prime contractor, prime contractor and all subcontractors, as though fully written therein.

## **WAGE RATE REQUIREMENTS**

Wage Rate Requirements under Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) Loans for Subrecipients that are Governmental Entities.

### **Preamble**

All laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code.

Pursuant to Reorganization Plan No. 14 and the Copeland Act, 40 U.S.C. 3145, the Department of Labor has issued regulations at 29 CFR Parts 1, 3, and 5 to implement the Davis-Bacon and related Acts. Regulations in 29 CFR 5.5 instruct agencies concerning application of the standard Davis-Bacon contract clauses set forth in that section. Federal agencies providing grants, cooperative agreements, and loans shall ensure that the standard Davis-Bacon contract clauses found in 29 CFR 5.5(a) are incorporated in any resultant covered contracts that are in excess of \$2,000 for construction, alteration or repair (including painting and decorating).

For additional guidance on the wage rate requirements, contact your awarding agency. Recipients of grants, cooperative agreements and loans should direct their initial inquiries concerning the application of Davis-Bacon requirements to a particular federally assisted project to the Federal agency funding the project. The Secretary of Labor retains final coverage authority under Reorganization Plan Number 14.

### **Wage Rate Requirements under CWSRF and DWSRF Loans.**

#### 1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Davis-Bacon prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a state water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

#### 2. Obtaining Wage Determinations.

(a) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the subrecipient shall monitor <https://sam.gov/> weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.

(ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor <https://sam.gov/> on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from <https://sam.gov/> into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract

or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

### 3. Contract and Subcontract Provisions

(a) The Recipient and/or subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or part from Federal funds in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act 1937 or under Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate of any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis –Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in §5.5(a)(4). Laborers or

mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rate conformed under paragraph (a)(1)(ii) of this section) and the subcontractors at the site of work in a prominent and accessible place where it can be easily seen by the workers.

Recipients may obtain wage determinations from the U.S. Department of Labor's web site: <https://sam.gov/>.

(ii)(A) The recipient, on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under contract shall be classified in conformance with the wage determination. The EPA award official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the recipient agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the recipient to the EPA award official. The award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the award official or will notify the award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the recipient do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the questions, including the views of all interested parties and the recommendation of the award official, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The (recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of

1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the EPA if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the recipient who will maintain the records on behalf of EPA. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an



individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at:

<http://www.dol.gov/whd/programs/dbra/wh347.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the EPA if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the recipient for transmission to the EPA, if requested by EPA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the recipient.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees—

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the

applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as

amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal agency) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis- Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### 4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section. Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(3) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

## 5. Compliance Verification

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a) (6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the subrecipient should conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB . Subrecipients shall

immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

(INSERT APPLICABLE WAGE DECISION HERE)



## **AMERICAN IRON AND STEEL (AIS) REQUIREMENTS**

The Contractor acknowledges that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel,” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

One of the following certification forms should be used as documentation of compliance with the AIS requirements.

## Sample Certification for AIS

The following information is provided as a sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx
2. Xxx
3. Xxx

Such process took place at the following location:

\_\_\_\_\_

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

## Sample Step Certification for AIS

The following information is provided as a sample letter of step certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx
2. Xxx
3. Xxx

Such process took place at the following location:

\_\_\_\_\_

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

## **LEAD SERVICE LINE REPLACEMENT (DWSRF)**

The memo *Implementing Lead Service Line Replacement Projects Funded by the Drinking Water State Revolving Fund* dated May 1, 2024 and issued by the Environmental Project Agency outlines the following requirements that apply to lead service line replacements (LSLR) depending on the project type:

### **Stand-alone LSLR**

Stand-alone LSLR projects refers to projects that are solely replacing lead service lines and are not conducting additional construction or activities that would disturb the service line, such as main replacement or meter replacement. All LSLRs conducted through a stand-alone LSLR project must replace the full lead service line (i.e., the customer-owned and system-owned portions) unless a portion has already been replaced or is concurrently being replaced with another funding source. The entire length of each property's lead service line must be replaced at the same time except where it is impractical due to access constraints or local requirements that prevent the same organization from completing the full LSLR at the same time. The time between starting and completing full LSLR should be as short as possible and should not exceed three months.

### **LSLR in Conjunction with Planned Infrastructure Projects**

All DWSRF-funded projects involving LSLR implemented in conjunction with other planned infrastructure projects that affect the service line must plan to replace the full service line. Planned infrastructure work includes water infrastructure or capital improvement projects that do not solely replace lead service lines. Examples include, but are not limited to, water main replacement, meter replacement, and transportation-related construction projects. A partial LSLR may only be funded by the SRF where the water system shows all of the following: that the partial LSLR is done in conjunction with planned infrastructure work, that disturbance to the service line is unavoidable because of the planned infrastructure work, and that the water system has documented customer refusal showing it cannot gain access to that property to conduct a full LSLR following multiple attempts. Refusals may consist of any of the following: a refusal signed by the customer, documentation of a verbal statement refusing replacement, or documentation of no response after multiple attempts to reach the customer regarding full LSLR.

### **LSLR in Conjunction with Emergency Infrastructure Repair or Replacement**

Emergency repair and replacement of drinking water transmission and distribution infrastructure can necessitate unexpected replacement of lead service lines. Under such circumstances, DWSRF-funded borrowers must offer to replace the full lead service line. However, the borrower may use DWSRF funding to pay for emergency partial LSLR if full replacement is not possible due to a documented customer refusal. Refusals may consist of any of the following: a refusal signed by the customer, documentation of a verbal statement refusing replacement, or documentation of no response after multiple attempts to reach the customer regarding full LSLR.

## ND Minority Participation Goals

Covered Area*	Goal (percent)*
149 Fargo-Moorhead, ND-MN:	
Non-SMSA Counties -----	0.7
MN Becker; MN Clay; MN Wilkin; ND Barnes; ND Cass; ND Dickey; ND Eddy; ND Foster; ND Griggs; ND La Moure; ND Logan; ND McIntosh; ND Ransom; ND Richland; ND Sargent; ND Steele; ND Stutsman; ND Traill	
150 Grand Forks, ND:	
SMSA Counties:	
2985 Grand Forks, ND-MN -----	1.2
MN Polk; ND Grand Forks	
Non-SMSA Counties -----	2.0
MN Beltrami; MN Clearwater; MN Hubbard; MN Kittson; MN Lake of the Woods; MN Mahnommen; MN Marshall; MN Norman; MN Pennington; MN red Lake; MN Roseau; ND Benson; ND Cavalier; ND Nelson; ND Pembina; ND Ramsey; ND Towner; ND Walsh	
151 Bismarck, ND:	
SMSA Counties:	
1010 Bismarck, ND-----	0.4
ND Burleigh; ND Morton	
Non-SMSA Counties -----	1.3
ND Adams; ND Billings; ND Bowman; ND Dunn; ND Emmons; ND Golden Valley; ND Grant; ND Hettinger; ND Kidder; ND Mercer; ND Oliver; ND Sheridan; ND Sioux; ND Slope; ND Stark; ND Wells	
152 Minot, ND:	
Non-SMSA Counties -----	4.4
MT Daniels; MT Richland; MT Roosevelt; MT Sheridan; ND Bottineau; ND Burke; ND Divide; ND McHenry; ND McKenzie; ND McLean; ND Mountrail; ND Pierce; ND Renville; ND Rolette; ND Ward; ND Williams	

\*Insert the project location and the appropriate minority participation goal in the following Executive Order 11246 language. The female participation goal is 6.9% for the entire state.

# EQUAL EMPLOYMENT OPPORTUNITY and AFFIRMATIVE ACTION REQUIREMENTS on FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

## Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offerer's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation in each trade \_\_\_\_\_  
Goals for female participation in each trade - \_\_\_\_\_

These goals are applicable to all the contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number for the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is \_\_\_\_\_.

**This notice shall be included in, and shall be a part of, all solicitations for offers and bids on all federal and federally assisted construction contracts or subcontracts.**

### EQUAL OPPORTUNITY CLAUSES

The Equal Opportunity Clause published at 41 CFR Part 60-1.4(b) is required to be included in, and is part of, all nonexempt federally assisted construction contracts and subcontracts. The Equal Opportunity Clause shall be considered to be a part of every contract and subcontract required by the regulations in this part to include such a clause whether or not it is physically incorporated in such contracts.

In addition to the clauses described above, all federal contracting officers, all applicants, and all non-construction contractors, as applicable, shall include the specifications set forth in this section in all federal and federally assisted construction contracts in excess of \$10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part and in construction subcontracts in excess of \$10,000 necessary in whole or in part to the performance of nonconstruction Federal contracts and subcontracts covered under the Executive Order.

# STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:

a. "Covered Area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the employer's quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area, (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs (7)(a) through (p) of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the FEDERAL REGISTER in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women shall



excuse the contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the areas which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under (7)(b) above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7)(a) through (p). The efforts of a contractor association, joint contractor- union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under (7)(a) through (p) of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally, the contractor may be in violation of the Executive order if a specific minority group of women is under-utilized).

10. The contractor shall not use the goals and timetables of affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph (7) of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

# GUIDANCE FOR UTILIZATION OF SMALL, MINORITY AND WOMEN BUSINESS ENTERPRISES REQUIREMENTS

The North Dakota Drinking Water State Revolving Fund (DWSRF) and Clean Water State Revolving Fund (CWSRF), receive federal funds from the U.S. Environmental Protection Agency (EPA) to provide low interest rate loans to finance water infrastructure projects. As a condition of federal grant awards, EPA regulations require that loan recipients and sub-recipients (i.e., prime contractors and subcontractors) make a good-faith effort to award a fair share of work to DBE's who are minority business enterprises (MBE's) and women's business enterprises (WBE's). DBE requirements can be found in 40 CFR Part 33.

To ensure compliance with EPA's DBE requirements, both **Project Owners (Loan Recipients)** and **Prime Contractors must** undertake the good faith efforts to provide opportunities for DBE companies to participate in procurements. EPA regulations require evidence of the demonstration of the six good faith efforts in trying to achieve the DBE participation goals. DWSRF and CWSRF negotiated DBE participation goals with EPA of **2%** for MBEs and **3%** for WBEs. The DBE goals are not a quota.

## **Good Faith Efforts – 40 CFR 33.301**

The following good faith efforts which apply to the procurement categories involving EPA financial assistance funds can be found in **40 CFR, Subpart C, Part 33** of EPA's Disadvantaged Business Enterprise Program Rule.

1. Ensure DBE's are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities.
2. Search DBE lists for potential subcontracts/suppliers.
  - a. The DBE lists are updated frequently, so search on-line for the most current list.
  - b. Contact at least one DBE for each subcontract/supplier needed.
3. Provide notice to DBE organizations of opportunities to bid.
4. Arrange time frames for contracts and establish delivery schedules in a way that encourages and facilitates participation by DBEs in the competitive process.
5. Divide total requirements into smaller tasks or quantities and using DBE prime contractors and subcontractors when feasible to permit maximum DBE participation.
6. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
7. Use the services and assistance of the Small Business Administration (SBA), Department of Transportation (DOT) and Minority Business Development Agency of the U. S. Department of Commerce.
8. If the Prime Contractor awards subcontracts, require the prime contractor to take these same Good Faith Efforts.

## **TO PROVIDE PROCUREMENT OPPORTUNITIES TO DBE FIRMS, THE PROJECT OWNER SHOULD:**

- Conduct pre-bid meetings to inform potential bidders/contractors about DBE requirements and provide guidance in undertaking the required good faith efforts found at 40 CFR 33.301.
- When appropriate invite DBE companies to meetings, conferences, etc., to inform them of procurement opportunities.
- Use listings of certified DBEs from the U.S. Small Business Administration (SBA), North Dakota Department of Transportation (NDDOT), and EPA's Office of Small Business Programs (OSBP) etc, to solicit DBE companies as prime contractors whenever they are potential. The SBA maintains a list that can be found at the following link [http://dsbs.sba.gov/search/dsp\\_dsbs.cfm](http://dsbs.sba.gov/search/dsp_dsbs.cfm). The NDDOT maintains a list which can be found at the following link <http://dotnd.diversitycompliance.com>. EPA's OSBP maintains a list located on EPA's OSBP Home Page (<http://www.epa.gov/smallbusiness/>).

## **Procurement, Recordkeeping and Reporting**

### **1. PROJECT OWNERS ARE REQUIRED TO:**

- A. Ensure all prime contractors apply the Good Faith Efforts and submit required forms as listed below.
- B. Project Owners must require its prime contractor to pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the project owner/recipient.  
40 CFR 33.302(a)
- C. Maintain copies of all DBE documentation and forms.

### **2. PRIME CONTRACTORS ARE REQUIRED TO:**

- A. Notify the loan recipient in writing prior to any termination of a DBE subcontractor by the prime contractor. 40 CFR 33.302(b)
- B. Follow the six good faith efforts if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. 40 CFR 33.302(c)
- C. Follow the six good faith efforts for all subcontract and/or supplier procurements even if the prime contractor has achieved its fair share objectives. 40 CFR 33.302(d)

### **3. All SRF loan recipients are required to create and maintain a bidders list in accordance with 40 CFR, Subpart E, Part 33 of EPA's Disadvantaged Business Enterprise Program rule, (40 CFR 33.501(b)). The bidder's list must include all companies that bid/quote on prime contracts and/or bid/quote on subcontracts and supplies for SRF funded projects (including DBEs and non-DBEs). The bidder's list must include the following prime and subcontractor information (40 CFR 33.501): entity's name and the name of the person contacted; entity's mailing address, telephone number, and e-mail address; the task or material on which the entity bid/quoted, the amount and date of bid/quote; and the entity's status as an MBE/WBE or non-MBE/WBE.**

### **4. The recipient/contractor shall supply the Department of Environmental Quality with information concerning the award of contracts to MBE/WBE's upon request. This may include copies of subcontracts, purchase orders, and receipts which verify contract amounts and utilization.**

### **5. Bidders/offerors shall demonstrate compliance with good faith efforts in order to be deemed responsible.** Demonstration of compliance includes completion of the following MBE/WBE Subcontractor Solicitation Information form and inclusion in the bid envelope. The bidder must solicit quotes from at least three certified MBEs and three certified WBEs and include the required information on the form. The bidder must also include similar information on the form for non MBE/WBE subcontractors from which quotes were received for the same work offered to MBE/WBEs.

## MBE/WBE SUBCONTRACTOR SOLICITATION INFORMATION

Name, Address, & Phone Number of Subcontractor Contacted	Date that Quote was Requested	Description of Work Offered	Date of Follow-up & Person Contacted	Amount of Quote or Reason Not Quoting *	Quote Accepted? If not, List Reason for Rejection *	Indicate if MBE/WBE or non MBE/WBE

\* Use additional sheets if necessary.

The undersigned hereby certifies that the above information is true and correct.

**The contractor shall supply copies of subcontracts, purchase orders, and receipts which verify contract amounts and utilization of MBE/WBE subcontractors following contract award.**

By:

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

# CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

## A. INSTRUCTIONS

Under Executive Order 12549, an individual or organization debarred or excluded from participation in Federal assistance or benefit programs may not receive any assistance award under a Federal program, or a subagreement thereunder for \$25,000 or more. The status of prospective individuals or organizations can be checked at:

<http://www.sam.gov>

Accordingly, each prospective recipient of an EPA grant, loan, or cooperative agreement and any contract or subagreement participant thereunder must complete the attached certification or provide an explanation why they cannot complete the certification. For further details, see 40 CFR 32.510, Participants Responsibilities.

## B. WHERE TO SUBMIT

A prospective prime contractor must submit a completed certification or explanation to the project owner for the project. Each prospective subcontractor must submit a completed certification or explanation to the prime contractor for the project.

## C. HOW TO OBTAIN FORMS

Additional forms may be obtained from the State and may be reproduced.

United States Environmental Protection Agency  
Washington, DC 20460

**Certification Regarding Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

\_\_\_\_\_  
Typed Name & Title of Authorized Representative

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_ I am unable to certify to the above statements. My explanation is attached.



# PROHIBITION AGAINST LISTED VIOLATED FACILITIES

## A. REQUIREMENTS

(1) To comply with all the requirements of section 114 of the Clean Air Act, as amended (42 U.S.C. 1857, et seq., as amended by Pub. L. 92-604) and section 308 of the Clean Water Act (33 U.S.C. 1251, as amended), respectively, which relate to inspection, monitoring, entry, reports, and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, respectively, and all regulations and guidelines issued thereunder before the award of this contract.

(2) That no portion of the work required by this prime contract will be performed in a facility listed on the Environmental Protection Agency list of violating facilities on the date when this contract was awarded unless and until the EPA eliminates the name of such facility or facilities from the listing.

(3) To use his best efforts to comply with clean air and clean water standards at the facilities in which the contract is being performed.

(4) To insert the substance of the provisions of this clause, including this paragraph (4), in any nonexempt subcontract.

## B. DEFINITIONS

(1) Air Act means the Clean Air Act, as amended (42 U.S.C. 1857 et seq.).

(2) Water Act means the Clean Water Act, as amended (33 U.S.C. 1251 et seq.).

(3) Clean Air Standards means any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, or other requirements which are contained in, issued under, or otherwise adopted under the Air Act or Executive Order 11738, an applicable implementation plan as described in section 110 (d) of the Air Act (42 U.S.C. 1857c-5(d)), an approved implementation procedure or plan under section 111 (c) or section 111(d), or an approved implementation procedure under section 112(d) of the Air Act (42 U.S.C. 1857c-7(d)).

(4) Clean Water Standards means any enforceable limitation, control, condition, prohibition, standard, or other requirement which is promulgated under the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program, as authorized by section 402 of the Water Act (33 U.S.C. 1342), or by a local government to ensure compliance with pretreatment regulations as required by section 307 of Water Act (33 U.S.C. 1317).

(5) Compliance means compliance with clean air or water standards. Compliance shall also mean compliance with a schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency in accordance with the requirements of the Air Act or Water Act and regulations.

(6) Facility means any building, plant, installation, structure, mine, vessel, or other floating craft, location, or site of operations, owned, leased, or supervised by a contractor or subcontractor, to be used in the performance of a contract or subcontract. Where a location or site of operations contains or includes more than one building, plant, installation, or structure, the entire location or site shall be deemed to be a facility except where the Director, Office of Federal Activities, Environmental Protection Agency, determines that independent facilities are located in one geographical area.

## **PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT**

This term and condition implements 2 CFR 200.216 and is effective for obligations and expenditures of EPA financial assistance funding on or after 8/13/2020.

As required by 2 CFR 200.216, EPA recipients and subrecipients, including borrowers under EPA funded revolving loan fund programs, are prohibited from obligating or expending loan or grant funds to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities). Recipients, subrecipients, and borrowers also may not use EPA funds to purchase:

- a. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- b. Telecommunications or video surveillance services provided by such entities or using such equipment.
- c. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Consistent with 2 CFR 200.471, costs incurred for telecommunications and video surveillance services or equipment such as phones, internet, video surveillance, and cloud servers are allowable except for the following circumstances:

- a. Obligating or expending EPA funds for covered telecommunications and video surveillance services or equipment or services as described in 2 CFR 200.216 to:
  - (1) Procure or obtain, extend or renew a contract to procure or obtain;
  - (2) Enter into a contract (or extend or renew a contract) to procure; or
  - (3) Obtain the equipment, services, or systems.

Certain prohibited equipment, systems, or services, including equipment, systems, or services produced or provided by entities identified in section 889, are recorded in the System for Award Management exclusion list.

## **BUILD AMERICA, BUY AMERICA (BABA) REQUIREMENTS**

The Contractor acknowledges that it understands the goods and services under this Agreement are being funded with federal monies and have statutory requirements commonly known as “Build America, Buy America;” that requires all of the iron and steel, manufactured products, and construction materials used in the project to be produced in the United States (“Build America, Buy America Requirements”) including iron and steel, manufactured products, and construction materials provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and Funding Authority (a) the Contractor has reviewed and understands the Build America, Buy America Requirements, (b) all of the iron and steel, manufactured products, and construction materials used in the project will be and/or have been produced in the United States in a manner that complies with the Build America, Buy America Requirements, unless a waiver of the requirements is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the Build America, Buy America Requirements, as may be requested by the Owner or the Funding Authority. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or Funding Authority to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Owner or Funding Authority resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Funding Authority or any damages owed to the Funding Authority by the Owner). If the Contractor has no direct contractual privity with the Funding Authority, as a lender or awardee to the Owner for the funding of its project, the Owner and the Contractor agree that the Funding Authority is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the Funding Authority.

## Sample Certification for BABA

The following information is provided as a sample letter of certification for BABA compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: Build America, Buy America Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the Build America, Buy America requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx
2. Xxx
3. Xxx

Such process took place at the following location:

\_\_\_\_\_

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

## Sample Step Certification for BABA

The following information is provided as a sample letter of step certification for BABA compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: Build America, Buy America Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the Build America, Buy America requirements as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx
2. Xxx
3. Xxx

Such process took place at the following location:

\_\_\_\_\_

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

## SIGNAGE REQUIREMENTS

This project is subject to Bipartisan Infrastructure Law (BIL) signage requirements. A physical sign displaying the official Investing in America emblem and EPA logo shall be placed at the construction site in an easily visible location. **Contact the SRF program engineer assigned to the project or [ndsrf@nd.gov](mailto:ndsrf@nd.gov) or 701-328-5211 to place a sign order and arrange pick-up in Bismarck, ND. Signs shall be returned to DEQ upon completion of the project.**

### Signage Requirements

- a. Investing in America Emblem: The recipient will ensure that a sign is placed at construction sites supported under this award displaying the official Investing in America emblem and must identify the project as a “project funded by President Biden’s Bipartisan Infrastructure Law.” Construction is defined at 40 CFR 33.103 as “erection, alteration, or repair (including dredging, excavating, and painting) of buildings, structures, or other improvements to real property, and activities in response to a release or a threat of a release of a hazardous substance into the environment, or activities to prevent the introduction of a hazardous substance into a water supply.” The sign must be placed at construction sites in an easily visible location that can be directly linked to the work taking place and must be maintained in good condition throughout the construction period. The recipient will ensure compliance with the guidelines and design specifications for using the official Investing in America emblem and corresponding logomark available at: <https://www.whitehouse.gov/wp-content/uploads/2023/02/Investing-in-America-Brand-Guide.pdf> and [https://www.epa.gov/sites/default/files/2015-01/documents/epa\\_logo\\_seal\\_specifications\\_for\\_infrastructure\\_grants.pdf](https://www.epa.gov/sites/default/files/2015-01/documents/epa_logo_seal_specifications_for_infrastructure_grants.pdf)
- b. EPA Logo: The recipient will ensure that signage displays the EPA logo along with the official Investing in America emblem. The EPA logo must not be displayed in a manner that implies that EPA itself is conducting the project. Instead, the EPA logo must be accompanied with a statement indicating that the recipient received financial assistance from EPA for the project. The recipient will ensure compliance with the sign specifications provided by the EPA Office of Public Affairs (OPA) available at: <https://www.epa.gov/grants/epa-logo-seal-specifications-signage-produced-epa-assistance-agreement-recipients>. As provided in the sign specifications from OPA, the EPA logo is the preferred identifier for assistance agreement projects and use of the EPA seal requires prior approval from the EPA. To obtain the appropriate EPA logo or seal graphic file, the recipient should send a request directly to OPA and include the EPA Project Officer in the communication. Instructions for contacting OPA is available on the Using the EPA Seal and Logo page.
- c. Procuring Signs: Consistent with section 6002 of RCRA, 42 U.S.C. 6962, and 2 CFR 200.323, recipients are encouraged to use recycled or recovered materials when procuring signs. Signage costs are considered an allowable cost under this assistance agreement provided that the costs associated with signage are reasonable. Additionally, to increase public awareness of projects serving communities where English is not the predominant language, recipients are encouraged to translate the language on signs (excluding the official Investing in America emblem or EPA logo or seal) into the appropriate non-English language(s). The costs of such translation are allowable, provided the costs are reasonable.

**Fessenden Wastewater Lagoon Improvements  
City of Fessenden, North Dakota  
Apex Project# 24.457.0150**

**Section 00840 – Geotechnical Report**

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# Geotechnical Evaluation Report

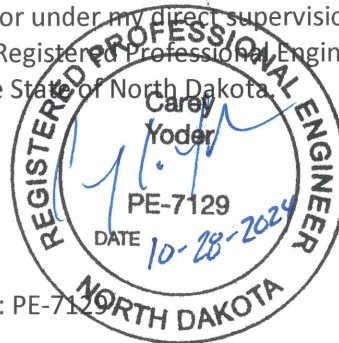
Fessenden Wastewater Lagoon Improvements  
16<sup>th</sup> Street and 41<sup>st</sup> Avenue NE  
Fessenden, North Dakota

*Prepared for*

**Apex Engineering Group, Inc.**

## Professional Certification:

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of North Dakota.



Carey C. Yoder, PE  
Project Engineer  
Registration Number: PE-7129  
October 28, 2024

Project B2407491

Braun Intertec Corporation



October 28, 2024

Project B2407491

Susan Hazelett, PE  
Apex Engineering Group, Inc.  
600 S. 2<sup>nd</sup> Street, Suite 145  
Bismarck, North Dakota 58504

Re: Geotechnical Evaluation  
Fessenden Wastewater Lagoon Improvements  
16<sup>th</sup> Street and 41<sup>st</sup> Avenue NE  
Fessenden, North Dakota

Dear Ms. Hazelett:

We are pleased to present this Geotechnical Evaluation Report for the Fessenden Wastewater Lagoon Improvements. The soils encountered in the existing berm consisted of fill that was made up of fill and glacial till, both composed of sandy lean clay. In the field to the west of the lagoon, we encountered fat and lean clay with layers of sand. The clays may be utilized as liner or embankment fill if additional material is needed for the improvements.

Thank you for making Braun Intertec your geotechnical consultant for this project. If you have questions about this report, or if there are other services that we can provide in support of our work to date, please contact Carey Yoder at 701.425.4409 ([cyoder@braunintertec.com](mailto:cyoder@braunintertec.com))

Sincerely,

BRAUN INTERTEC CORPORATION



Carey C. Yoder, PE  
Project Engineer



Charles (Wes) Dickhut  
Principal Engineer/ Associate Director

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### Appendix

Soil Boring Location Sketch

Fence Diagram

Log of Boring Sheets ST-01 to ST-07

Descriptive Terminology of Soil

Laboratory Test Results

## A. Introduction

### A.1. Project Description

This Geotechnical Evaluation Report addresses the design and reconstruction of the City of Fessenden wastewater lagoon located north of 16<sup>th</sup> Street NE, approximately one mile west of Fessenden, North Dakota. The lagoon consists of 2 cells. The adjacent land to the west of the lagoons is being considered to be used as a source of material for the reconstruction of the lagoons.

**Table 1. Proposed Lagoon Cell**

<b>Aspect</b>	<b>Description</b>
Bottom of Pond Elevation	East Cell – 1602 feet/ West Cell – 1601 feet
Top of Embankment Elevation	1610 feet
Pond Slopes	Interior & Exterior - 3H:1V (Horizontal: Vertical)
Lagoon Cell Area	East Cell – Approximately 23 Acres West Cell – Approximately 9 1/2 Acres

We have described our understanding of the proposed construction and site to the extent others reported it to us. Depending on the extent of available information, we may have made assumptions based on our experience with similar projects. If we have not correctly recorded or interpreted the project details, the project team should notify us. New or changed information could require additional evaluation, analyses and/or recommendations.

### A.2. Site Conditions

Currently, the lagoons are being utilized by the city and have sediment buildup that is creating issues with the incoming sewage. The adjacent land is currently used for crop and hay fields.

Current grades of the lagoon range from elevation 1605 to 1608 feet. Generally, the site is relatively flat with a slight slope upward from the center berm to the outer berms. The adjacent land elevations ranging from 1604 feet to 1607 feet, sloping upward from south to north.

**Photograph 1. Aerial Photograph of the Site in 2022**



Photograph provided by Google Earth™ dated July 29, 2022.

### **A.3. Purpose**

The purpose of our geotechnical evaluation was to characterize subsurface geologic conditions at selected exploration locations, evaluate their impact on the project, and provide geotechnical recommendations for the design and reconstruction of the existing lagoon.

### **A.4. Background Information and Reference Documents**

We reviewed the following information:

- Aerial photographs of the site from Google Earth™ from April 2016 to July 2022.
- *Surface Geology – Fessenden West Quadrangle, North Dakota*; by Bluemle, J.P., dated 2007, North Dakota Geological Survey, Map Scale 1:24,000, used to aid in our understanding of the site geology.
- Communications with Susan Hazelett, PE, with Apex Engineering Group regarding scope and budget.

## **A.5. Scope of Services**

We performed our scope of services for the project in accordance with our Proposal QTB200324 to Susan Hazelett with Apex Engineering, dated July 22, 2024, and authorized on August 8, 2024. The following list describes the geotechnical tasks completed in accordance with our authorized scope of services.

- Reviewing the background information and reference documents previously cited.
- Staking and clearing the exploration location of underground utilities. We selected and we staked the new exploration locations. We acquired the surface elevations and locations with a Trimble Catalyst GPS (Global Positioning System) unit having an accuracy of approximately +/- 1 centimeter. The Soil Boring Location Sketch included in the Appendix shows the approximate locations of the borings.
- Performing 3 standard penetration test (SPT) borings, denoted as ST-01 to ST-03, to nominal depths of 30 feet below grade across the site. Performing 4 power auger borings, denoted as ST-04 to ST-07, to nominal depths of 10 feet.
- Performing laboratory testing on select samples to aid in soil classification and engineering analysis.
- Preparing this report containing a boring location sketch, logs of soil borings, a summary of the soils encountered, results of laboratory tests, and recommendations for the proposed lagoon, including subgrade preparation, embankment side slopes, and clay liner.

Our scope of services did not include environmental services or testing and our geotechnical personnel performing this evaluation are not trained to provide environmental services or testing. We can provide environmental services or testing at your request.

## **B. Results**

### **B.1. Geologic Overview**

According to geologic literature, the surficial geological materials consist of glacial deposits. The glacial deposits consist of a mixture of clay, silt, and sand.

We based the geologic origins used in this report on the soil types, in-situ and laboratory testing, and available common knowledge of the geological history of the site. Because of the complex depositional history, geologic origins can be difficult to ascertain. We did not perform a detailed investigation of the geologic history for the site.

## B.2. Boring Results

Table 2 provides a summary of the soil boring results, in the general order we encountered the strata. Please refer to the Log of Boring sheets in the Appendix for additional details. The Descriptive Terminology sheets in the Appendix include definitions of abbreviations used in Table 2.

**Table 2. Subsurface Profile Summary\***

Strata	Soil Type - ASTM Classification	Range of Penetration Resistances	Commentary and Details
Topsoil Fill	CL	8 BPF	<ul style="list-style-type: none"> <li>▪ Black in color.</li> <li>▪ Moisture condition generally moist.</li> <li>▪ Not present at all borings.</li> <li>▪ Thicknesses at boring locations ST-02 and ST-03 of 1 foot.</li> </ul>
Topsoil	CL		<ul style="list-style-type: none"> <li>▪ Dark brown in color.</li> <li>▪ Moisture condition generally moist.</li> <li>▪ Thicknesses at boring locations ST-04 to ST-07 of 1 foot.</li> </ul>
Fill	CL	4 to 35 BPF	<ul style="list-style-type: none"> <li>▪ Gray and brown to dark brown in color.</li> <li>▪ Moisture condition generally moist.</li> <li>▪ Thicknesses at boring locations varied from 2 to 7 feet.</li> <li>▪ Highly variable, soils intermixed.</li> <li>▪ Possible cobbles and boulders.</li> </ul>
Glacial deposits	SP-SM, SM	--	<ul style="list-style-type: none"> <li>▪ Intermixed layers of glacial outwash and till.</li> <li>▪ Possible cobbles and boulders.</li> <li>▪ Variable amounts of gravel; may contain cobbles and boulders.</li> <li>▪ Moisture condition generally moist.</li> </ul>
	SC, CL, CH	4 to 67 BPF	

\*Abbreviations defined in the attached Descriptive Terminology sheets.

For simplicity in this report, we define existing fill to mean existing, uncontrolled or undocumented fill.

### B.3. Groundwater

Table 3 summarizes the depths where we observed groundwater; the attached Log of Boring sheets in the Appendix also include this information and additional details.

**Table 3. Groundwater Summary**

Location	Surface Elevation	Measured or Estimated Depth to Groundwater (ft)	Corresponding Groundwater Elevation (ft)
ST-02	1605	12	1593
ST-03	1608	16	1592
ST-04	1604	7	1597
ST-05	1605	8	1597
ST-06	1607	9	1598
ST-07	1604	8	1596

At the time of our observation, the groundwater surface elevation at the lagoon appeared to be about elevation 1693 feet. The groundwater surface elevation of the field borings ranged from 1596 to 1598 feet. The soil borings indicate a layered soil profile that is conducive for encountering perched water conditions. Project planning should expect groundwater will fluctuate in relation to season conditions.

### B.4. Laboratory Test Results

#### B.4.a. Moisture Content Tests

We performed moisture content (MC) tests (per ASTM International D2216) on selected samples to assist in our classifications and estimations of the soils' engineering properties. The moisture content of the native clay deposits varied from approximately 12 to 28 percent, indicating that the material was near to above its probable optimum moisture content. The results of the moisture content tests are listed in the "MC" column of the Log of Boring sheets in the Appendix.



#### **B.4.b. Atterberg Limits Tests**

We performed Atterberg limits tests (per ASTM D4318) on selected samples for classification, evaluation of the range of soil plasticity, and an estimation of engineering parameters related to consolidation. Liquid limits determined for the clays ranged from 23 to 31 percent and plastic limits ranged from 12 to 16 percent. Plastic indices for the soils were 8 and 16 percent. These results indicate that the soils are generally comprised of lean clay (CL) deposits. The results of the Atterberg limits tests are listed in the “Tests or Remarks” column on the attached Log of Boring sheets.

#### **B.4.c. Percent Passing the #200 Sieve Tests**

We performed tests to evaluate the percent of particles passing the #200 sieve (P200) (per ASTM D1140) to estimate the engineering properties of the granular material. The results of these tests indicated the soils encountered had P200s ranging from 25 to 34 percent.

### **C. Recommendations**

#### **C.1.a. Proposed Lagoon Berm Slopes**

The frequency of pond filling and emptying will affect the stability of the interior slopes of the existing ponds. We have assumed that the interior and exterior pond slopes are designed using a 3H:1V slope inclination. Based on our experience with similar soils, we anticipate 3H:1V slopes constructed using the recommendations herein will be suitable for the design of the proposed lagoon. We can perform stability analyses upon request.

#### **C.1.b. Proposed Lagoon Subgrade Preparation**

The borings indicate that lean clay deposits will generally be encountered at the bottom of the proposed lagoon cells. The clay will be suitable for embankment construction and use as a liner. Sand materials encountered in the excavation will not be suitable for liner construction but may be used in the embankment.

Subgrade corrections should be anticipated during liner construction. The native soils in the cell bottom should be excavated to finished grade, and the exposed subgrade should be observed during construction by a geotechnical engineer to evaluate the extent of areas that may require a correction. After confirming the subgrade is free of sand, the subgrade will need to be scarified to a depth of 6 inches and prepared in accordance with our requirements for liner given in Section C.2.

### **C.1.c. Earthwork**

The lean and fat clays that will be encountered at the bottom of the excavations are susceptible to strength loss and become difficult to work with if water is allowed to pond on them and they become saturated. When saturated, these soils are susceptible to strength loss from construction traffic/vibrations, including foot traffic. No construction traffic should be permitted on any wet or saturated silty sand or silty clay soils.

## **C.2. Proposed Site Grading and Subgrade Preparation**

### **C.2.a. Lagoon Cell Subgrade Excavations**

We recommend removing topsoil, surficial vegetation, tree masses, and associated root zones from below the proposed lagoon footprint and to at least 5 feet beyond. We recommend removing unsuitable materials that are within 2 feet of the proposed bottom of liner elevation. We define unsuitable materials as sands, silts, topsoil, vegetation, organic soils, and frozen materials.

Excavation depths will vary between the borings. Portions of the excavations may also extend deeper than indicated by the borings. We recommend the pond bottom be excavated to proposed grade, and then be observed by a geotechnical representative to make the necessary field judgments regarding the suitability of the exposed soils. It would be prudent to remove any sand layers. After the subgrade is approved, we recommend that the soil be scarified to a depth of 1/2 foot, and then moisture conditioned and compacted in accordance with recommendations for pond liner. This will be suitable for the base of the lagoon cell.

### **C.2.b. Excavation Oversizing**

When removing unsuitable materials below the clay liner, we recommend the excavation extend outward and downward at an inclination of 1H:1V (horizontal: vertical) or flatter.

### **C.2.c. Excavated Slopes**

Based on the borings, we anticipate on-site soils in excavations will consist of predominantly lean and fat clay. The native clay soils should be considered Type B Soil under OSHA (Occupational Safety and Health Administration) guidelines. All sandy soils and soils where ground water is observed to be freely seeping should be considered Type C Soils. OSHA guidelines indicate unsupported excavations in Type B soils should have a gradient no steeper than 1H:1V; and in Type C soils should have a gradient no steeper than 1.5H:1V. Slopes constructed in this manner may still exhibit surface sloughing. OSHA requires an engineer to evaluate slopes or excavations over 20 feet in depth. We wish to note this geotechnical evaluation does not constitute an excavation plan for excavations over 20 feet.

An OSHA-approved qualified person should review the soil classification in the field. Excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P, “Excavations and Trenches.” This document states excavation safety is the responsibility of the contractor. The project specifications should reference these OSHA requirements.

**C.2.d. Excavation Dewatering**

We recommend removing groundwater from the excavations when encountered. Project planning should include temporary sumps and pumps for excavations in low-permeability soils, such as clays.

**C.2.e. Fill Materials and Compaction**

Table 4 below contains our recommendations for fill materials.

**Table 4. Fill Materials**

Locations To Be Used	Fill Classification	Possible Soil Type Descriptions	Gradation	Additional Requirements
Berms and below liner	Structural fill	CH, CL, SM, SC	100% passing 2-inch sieve	< 2% Organic Content (OC)
Liner	Low permeability soil	CH, CL	% Passing P200 > 60 LL > 20 PI > 10	< 2% OC

We recommend spreading fill in loose lifts of approximately 6 to 12 inches thick. We anticipate mostly cut for the proposed ponds, but any fill placed on slopes steeper than 4H:1V should be benched into the slopes so that the fill is compacted in horizontal lifts and structurally stair-stepped into the underlying sloped surface. We recommend compacting fill in accordance with the criteria presented below in Table 5. The project documents should specify relative compaction of fill, based on the structure located above the fill, and vertical proximity to that structure.

**Table 5. Compaction Recommendations Summary**

Reference	Relative Compaction, percent (ASTM D698 – Standard Proctor)	Moisture Content Variance from Optimum, percentage points	
		< 12% Passing #200 Sieve (typically SP, SP-SM)	> 12% Passing #200 Sieve (typically CL, CH, SM, SC)
Below berm and oversizing zones	98	±3	-1 to +3
Liner	95	NA	-1 to +3
Berm Fill	95	±3	-1 to +3

The project documents should not allow the contractor to use frozen material as fill or to place fill on frozen material. Frost should not penetrate under foundations during construction. The onsite soils are moisture and frost sensitive, and construction will not be practical during winter weather.

We recommend performing density tests in fill to evaluate if the contractors are effectively compacting the soil and meeting project requirements.

#### **C.2.f. Pond Liner**

We did not perform a permeability test. Based on the lean clay soil encountered, we estimated that the permeability would be less than  $1 \times 10^{-7}$  cm/sec. We recommend that the clay liner constructed of onsite clays be a minimum of 2-feet-thick. We anticipate the 2-foot clay layer will allow a maximum seepage velocity of less than 6 inches per year in accordance with state requirements.

#### **C.2.g. Embankment Slope Finishing and Protection**

We assume others will evaluate the need for riprap or vegetation to limit surface erosion, localized scour, and sloughing, and develop specifications for vegetation or other forms of surface protection (erosion control mats or armor). It is our opinion stripped topsoil can be re-used to cover the finished embankment slopes. The sand that will likely be exposed in portions of the excavation are susceptible to erosion and should be covered or stabilized without delay. Temporary grading should include provisions to prevent concentrated water from flowing over sands.

### **C.3. Equipment Support**

The recommendations included in the report may not be applicable to equipment used for the construction and maintenance of this project. We recommend evaluating subgrade conditions in areas of shoring, scaffolding, cranes, pumps, lifts, and other construction equipment prior to mobilization to determine if the exposed materials are suitable for equipment support or require some form of subgrade improvement. We also recommend project planning consider the effect that loads applied by such equipment may have on structures they bear on or surcharge – including pavements, buried utilities, below-grade walls, etc. We can assist you in this evaluation.

## **D. Procedures**

### **D.1. Penetration Test Borings**

We drilled the penetration test borings with a truck-mounted core and auger drill equipped with hollow-stem auger. We performed the borings in general accordance with ASTM D6151 taking penetration test samples at 2 1/2- or 5-foot intervals in general accordance to ASTM D1586. We collected thin-walled

tube samples in general accordance with ASTM D1587 at selected depths. The boring logs show the actual sample intervals and corresponding depths. We also collected bulk samples of auger cuttings at selected locations for laboratory testing.

## **D.2. Power Auger Borings**

We performed the power auger borings with the same equipment as our penetration test borings and in general accordance with ASTM D1452. We inferred the soil classifications and strata depths from the cuttings brought to the surface by dead pulling the auger after screwing it to selected depths in the ground. At desired depths, we placed auger cuttings in bags and jars.

## **D.3. Exploration Logs**

### **D.3.a. Log of Boring Sheets**

The Appendix includes Log of Boring sheets for our penetration test borings. The logs identify and describe the penetrated geologic materials, and present the results of penetration resistance and other in-situ tests performed. The logs also present the results of laboratory tests performed on test samples, and groundwater measurements. The Appendix also includes a Fence Diagram intended to provide a summarized cross-sectional view of the soil profile across the site.

We inferred strata boundaries from changes in the penetration test samples and the auger cuttings. Because we did not perform continuous sampling, the strata boundary depths are only approximate. The boundary depths likely vary away from the boring locations, and the boundaries themselves may occur as gradual rather than abrupt transitions.

### **D.3.b. Geologic Origins**

We assigned geologic origins to the materials shown on the logs and referenced within this report, based on: (1) a review of the background information and reference documents cited above, (2) visual classification of the various geologic material samples retrieved during the course of our subsurface exploration, (3) penetration resistance testing performed for the project, (4) laboratory test results, and (5) available common knowledge of the geologic processes and environments that have impacted the site and surrounding area in the past.

## **D.4. Material Classification and Testing**

### **D.4.a. Visual and Manual Classification**

We visually and manually classified the geologic materials encountered based on ASTM D2488. When we performed laboratory classification tests, we used the results to classify the geologic materials in accordance with ASTM D2487. The Appendix includes a chart explaining the classification system we used.

### **D.4.b. Laboratory Testing**

The exploration logs in the Appendix note most of the results of the laboratory tests performed on geologic material samples. The remaining laboratory test results follow the exploration logs. We performed the tests in general accordance with ASTM procedures.

## **D.5. Groundwater Measurements**

The drillers checked for groundwater while advancing the penetration test borings, and again after auger withdrawal. We then filled the boreholes or allowed them to remain open for an extended period of observation, as noted on the boring logs.

## **E. Qualifications**

### **E.1. Variations in Subsurface Conditions**

#### **E.1.a. Material Strata**

We developed our evaluation, analyses and recommendations from a limited amount of site and subsurface information. It is not standard engineering practice to retrieve material samples from exploration locations continuously with depth. Therefore, we must infer strata boundaries and thicknesses to some extent. Strata boundaries may also be gradual transitions, and project planning should expect the strata to vary in depth, elevation and thickness, away from the exploration locations.

Variations in subsurface conditions present between exploration locations may not be revealed until performing additional exploration work, or starting construction. If future activity for this project reveals any such variations, you should notify us so that we may reevaluate our recommendations. Such variations could increase construction costs, and we recommend including a contingency to accommodate them.

### **E.1.b. Groundwater Levels**

We made groundwater measurements under the conditions reported herein and shown on the exploration logs, and interpreted in the text of this report. Note that the observation periods were relatively short, and project planning can expect groundwater levels to fluctuate in response to rainfall, flooding, irrigation, seasonal freezing and thawing, surface drainage modifications and other seasonal and annual factors.

## **E.2. Continuity of Professional Responsibility**

### **E.2.a. Plan Review**

We based this report on a limited amount of information, and we made a number of assumptions to help us develop our recommendations. We should be retained to review the geotechnical aspects of the designs and specifications. This review will allow us to evaluate whether we anticipated the design correctly, if any design changes affect the validity of our recommendations, and if the design and specifications correctly interpret and implement our recommendations.

### **E.2.b. Construction Observations and Testing**

We recommend retaining us to perform the required observations and testing during construction as part of the ongoing geotechnical evaluation. This will allow us to correlate the subsurface conditions exposed during construction with those encountered by the borings and provide professional continuity from the design phase to the construction phase. If we do not perform observations and testing during construction, it becomes the responsibility of others to validate the assumption made during the preparation of this report and to accept the construction-related geotechnical engineer-of-record responsibilities.

## **E.3. Use of Report**

This report is for the exclusive use of the addressed parties. Without written approval, we assume no responsibility to other parties regarding this report. Our evaluation, analyses and recommendations may not be appropriate for other parties or projects.

## **E.4. Standard of Care**

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

## Appendix





 DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING



SCALE: 1"=500'

**BRAUN  
INTERTEC**

The Science You Build On.

2908 Morrison Ave. Suite 3  
Bismarck, ND 58504  
701.204.8875  
braunintertec.com

Project No:  
B2407491

Drawing No:  
B2407491

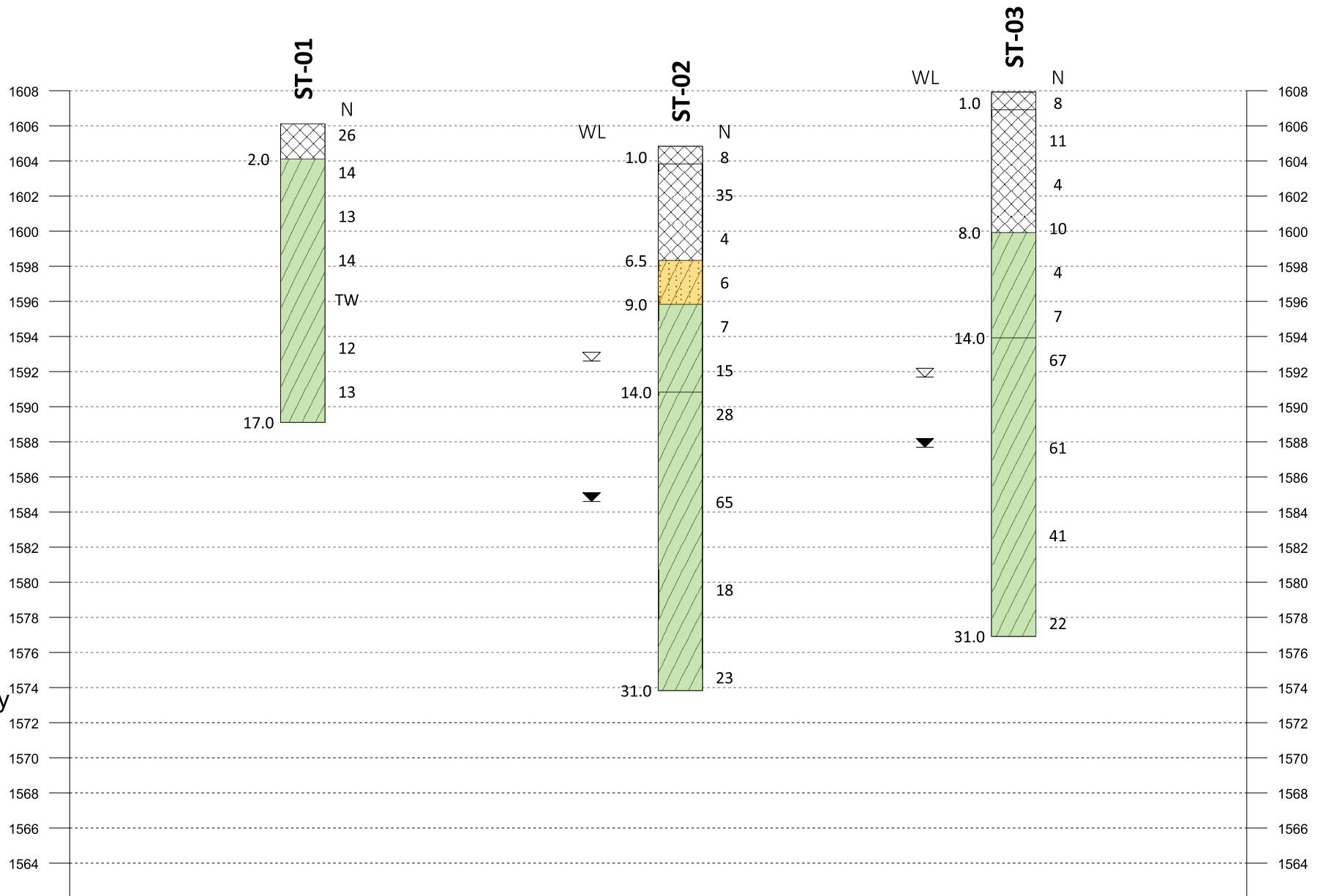
Drawn By: MMH  
Date Drawn: 10/18/24  
Checked By: CY  
Last Modified: 10/18/24

Fessenden Wastewater Lagoon Improvements




16th Street NE and 41st Avenue NE

Fessenden, North Dakota

**Boring Location  
Sketch**



**Legend Key**

-  Fill
-  CL
-  SC

1562.00  
↓

**Lagoon Borings**

Fence Diagram

Geotechnical Evaluation

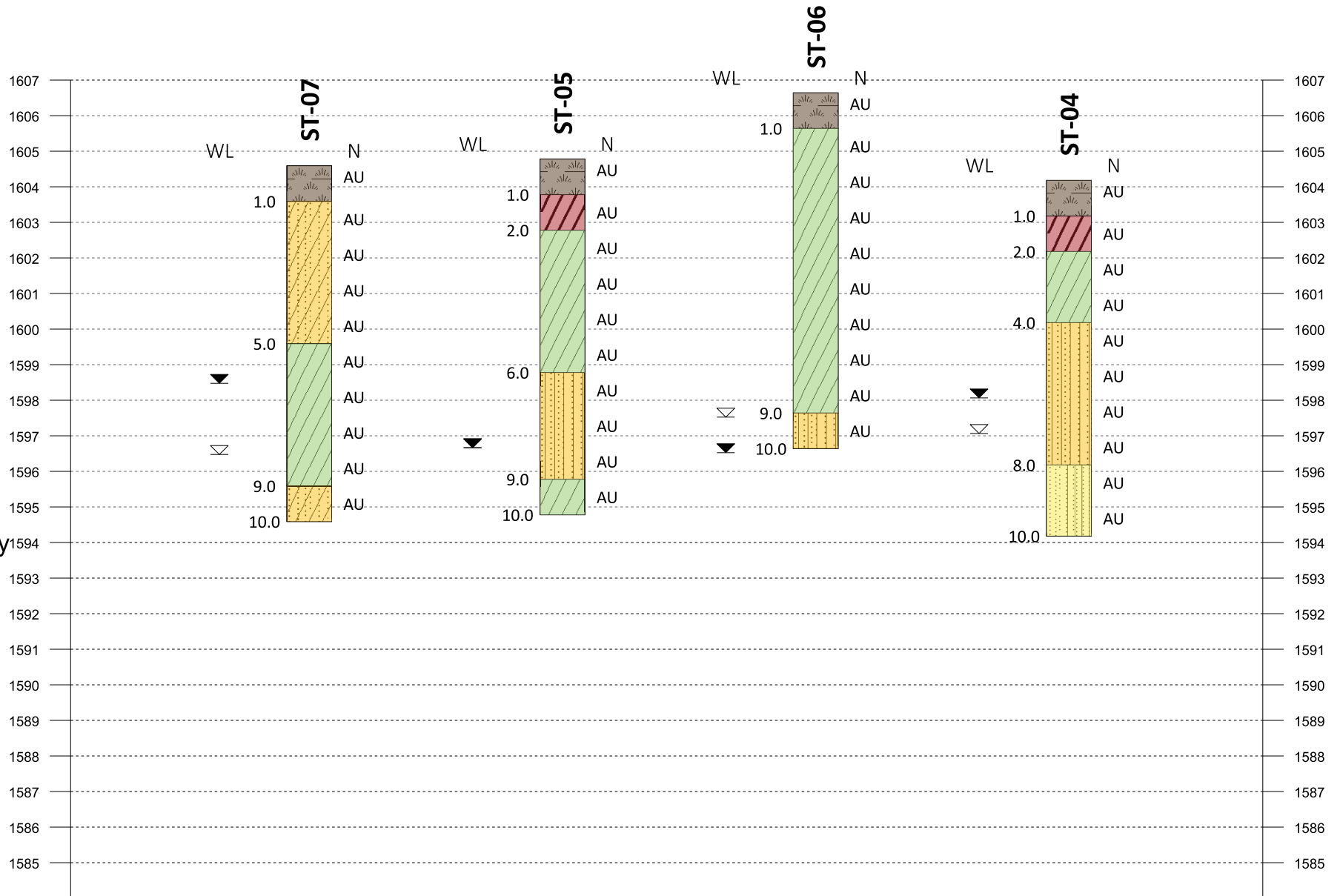
Fessenden Wastewater Lagoon Improvements

16th St NE and 41st Ave NE







Fessenden, North Dakota

Project ID: B2407491  
 Vert. Scale: 1"= 8'  
 Hor. Scale: NTS  
 Date: 10/25/2024





**Legend Key**

-  Topsoil
-  CL
-  CH
-  SC
-  SM
-  SP-SM

**Field Borings**

Fence Diagram

Geotechnical Evaluation  
 Fessenden Wastewater Lagoon Improvements  
 16th St NE and 41st Ave NE  
 Fessenden, North Dakota

Project ID: B2407491  
 Vert. Scale: 1"= 4'  
 Hor. Scale: NTS  
 Date: 10/25/2024



See Descriptive Terminology sheet for explanation of abbreviations

<b>Project Number B2407491</b>					<b>BORING: ST-01</b>	
<b>Geotechnical Evaluation</b>					LOCATION: Captured with RTK GPS.	
<b>Fessenden Wastewater Lagoon Improvements</b>					DATUM: WGS 84	
<b>16th St NE and 41st Ave NE</b>					LATITUDE: 47.649956	LONGITUDE: -99.662450
<b>Fessenden, North Dakota</b>					START DATE: 09/04/24	END DATE: 09/04/24
DRILLER: V.Burnham		LOGGED BY: C.Mathiason		SURFACING: Grass		WEATHER: Sunny, 85°
SURFACE ELEVATION: 1606.1 ft	RIG: 5702	METHOD: 3 1/4" HSA				

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q <sub>p</sub> tsf	MC %	Tests or Remarks
1604.1		FILL: SANDY LEAN CLAY (CL), trace Gravel, trace roots, brown and gray, moist	X	6-6-20 (26)			
2.0		SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist, stiff, iron oxide staining (GLACIAL TILL)	X	10" 4-7-7 (14)		14	
			5	12" 6-6-7 (13)	2	13	LL=24, PL=12, PI=12
		SILTY SAND layer at 8 feet	X	12" 3-7-7 (14)		12	
			10	10" TW			
			X	3-5-7 (12)		17	
		Trace Lignite and Silty Sand layer at 15 feet	15	3-5-8 (13)		18	
1589.1		END OF BORING		18"			
17.0		Boring then backfilled with auger cuttings					Water not observed while drilling.
				20			
				25			
				30			
				35			

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2407491 Geotechnical Evaluation Fessenden Wastewater Lagoon Improvements 16th St NE and 41st Ave NE Fessenden, North Dakota				BORING: <b>ST-02</b>			
DRILLER: V.Burnham				LOGGED BY: C.Mathiason			
SURFACE ELEVATION: 1604.8 ft		RIG: 5702		METHOD: 3 1/4" HSA			
BORING:		ST-02					
LOCATION:		Captured with RTK GPS.					
DATUM:		WGS 84					
LATITUDE:		47.649586		LONGITUDE: -99.660854			
START DATE:		09/04/24		END DATE: 09/04/24			
SURFACING:		Grass		WEATHER: Sunny, 85°			
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q <sub>p</sub> tsf	MC %	Tests or Remarks
1603.8	1.0	LEAN CLAY with SAND (CL), trace roots, black, moist (TOPSOIL FILL)	5	2-4-4 (8)			LL=31, PL=15, PI=16
		FILL: SANDY LEAN CLAY (CL), trace Gravel, trace roots, brown to dark brown, moist		8"			
1598.3	6.5	CLAYEY SAND (SC), fine to coarse-grained, trace Gravel, brown and gray, moist (GLACIAL TILL)	10	3-2-33 (35)		25	P200=34%
1595.8		SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist, medium to stiff, iron oxide staining (GLACIAL TILL)	15	6"		14	
1590.8	14.0	SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist, very stiff to hard (GLACIAL TILL)	20	1-2-2 (4)		15	Water observed at 12.0 feet while drilling.
		Driller noted potential Cobbles at 20 feet	25	6"		22	
1573.8	31.0	END OF BORING	30	6-6-9 (15)	2.25	21	Water observed at 20.0 feet immediately after withdrawal of auger.
		Boring then backfilled with auger cuttings	35	10"		20	
				12"	2.5	20	
				24-16-12 (28)			
				12"			
				32-36-29 (65)	3.25		
				0"			
				14-8-10 (18)			
				10"			
				8-9-14 (23)			
				15"			

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2407491 Geotechnical Evaluation Fessenden Wastewater Lagoon Improvements 16th St NE and 41st Ave NE Fessenden, North Dakota				BORING: <b>ST-03</b>			
DRILLER: V.Burnham				LOGGED BY: C.Mathiason			
SURFACE ELEVATION: 1607.9 ft				RIG: 5702			
METHOD: 3 1/4" HSA				SURFACING: Grass			
DATUM: WGS 84				WEATHER: Sunny, 85°			
START DATE: 09/04/24				END DATE: 09/04/24			
LATITUDE: 47.649140				LONGITUDE: -99.657479			
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q <sub>p</sub> tsf	MC %	Tests or Remarks
1606.9 1.0		LEAN CLAY with SAND (CL), trace roots, black, moist (TOPSOIL FILL) FILL: SANDY LEAN CLAY (CL), trace Gravel, trace roots, brown to dark brown, moist		6-4-4 (8) 12" 5-5-6 (11) 18" 2-2-2 (4) 10"		23 21	
1599.9 8.0		SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist, soft to stiff, iron oxide staining (GLACIAL TILL)	5 10	0-5-5 (10) 14" 2-2-2 (4) 12" 3-3-4 (7) 12"	0.75	18	LL=24, PL=16, PI=8
1593.9 14.0		SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist, very stiff to hard, iron oxide staining (GLACIAL TILL) <i>Driller noted hard drilling with potential Cobbles from 15 to 28 feet</i>	15	13-23-44 (67) 0"	1	19	
		Gray SAND layer at 20 feet	20	19-29-32 (61) 0"			
			25	18-20-21 (41) 3"		20	
1576.9 31.0		END OF BORING	30	19-10-12 (22) 10"	3.25		Water observed at 16.0 feet while drilling.
		Boring then backfilled with auger cuttings	35				Water observed at 20.0 feet immediately after withdrawal of auger.

See Descriptive Terminology sheet for explanation of abbreviations

<b>Project Number B2407491</b>					<b>BORING: ST-04</b>		
<b>Geotechnical Evaluation</b>					LOCATION: Captured with RTK GPS.		
<b>Fessenden Wastewater Lagoon Improvements</b>					DATUM: WGS 84		
<b>16th St NE and 41st Ave NE</b>					LATITUDE: 47.652302	LONGITUDE: -99.657479	
<b>Fessenden, North Dakota</b>					START DATE: 09/04/24	END DATE: 09/04/24	
DRILLER: V.Burnham	LOGGED BY: C.Mathiason		SURFACE ELEVATION: 1604.2 ft		RIG: 5702	METHOD: 3 1/4" HSA	
			SURFACING: Grass		WEATHER: Sunny, 85°		
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q <sub>p</sub> tsf	MC %	Tests or Remarks
1603.2		LEAN CLAY (CL), trace Sand, trace roots, dark brown, moist (TOPSOIL)		AU		18	
1.0		FAT CLAY (CH), with Silt lenses, trace Sand, brown and gray, moist (GLACIAL TILL)		AU			
1602.2		SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist, iron oxide staining (GLACIAL TILL)		AU		16	LL=23, PL=12, PI=11
2.0				AU			
1600.2				AU			
4.0				AU			
				AU			
1596.2				AU			
8.0				AU			
1594.2				AU			
10.0				AU			
		POORLY GRADED SAND with SILT (SP-SM), fine to coarse-grained, trace Gravel, brown and gray, wet (GLACIAL OUTWASH)		AU			Water observed at 7.0 feet while drilling.
		END OF BORING					Water observed at 6.0 feet immediately after withdrawal of auger.
		Boring then backfilled with auger cuttings					

See Descriptive Terminology sheet for explanation of abbreviations

<b>Project Number B2407491</b>				<b>BORING: ST-05</b>	
<b>Geotechnical Evaluation</b>				LOCATION: Captured with RTK GPS.	
<b>Fessenden Wastewater Lagoon Improvements</b>				DATUM: WGS 84	
<b>16th St NE and 41st Ave NE</b>				LATITUDE: 47.650982	LONGITUDE: -99.671118
<b>Fessenden, North Dakota</b>				START DATE: 09/05/24	END DATE: 09/05/24
DRILLER: V.Burnham	LOGGED BY: C.Mathiason		SURFACING: Grass		WEATHER: Sunny, 85°
SURFACE ELEVATION: 1604.8 ft	RIG: 5702	METHOD: 3 1/4" HSA			

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q <sub>p</sub> tsf	MC %	Tests or Remarks
1603.8		LEAN CLAY (CL), trace Sand, trace roots, dark brown, moist (TOPSOIL)		AU		15	
1.0				AU			
1602.8		FAT CLAY (CH), with Silt lenses, trace Sand, brown and gray, moist (GLACIAL TILL)		AU		14	LL=25, PL=15, PI=10
2.0		SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist (GLACIAL TILL)		AU		16	
1598.8			5	AU			
6.0		SILTY SAND (SM), fine-grained, brown, moist to wet (GLACIAL TILL)		AU			
1595.8				AU			
9.0		SANDY LEAN CLAY (CL), trace Gravel, brown, wet (GLACIAL TILL)		AU			
1594.8			10				Water observed at 8.0 feet while drilling.
10.0		END OF BORING					Water observed at 8.0 feet immediately after withdrawal of auger.
		Boring then backfilled with auger cuttings					
			15				
			20				
			25				
			30				
			35				



See Descriptive Terminology sheet for explanation of abbreviations

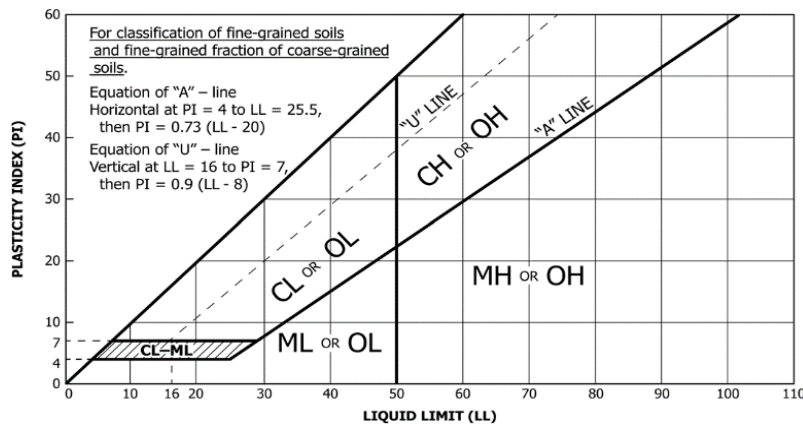
<b>Project Number B2407491</b>					<b>BORING: ST-06</b>			
<b>Geotechnical Evaluation</b>					LOCATION: Captured with RTK GPS.			
<b>Fessenden Wastewater Lagoon Improvements</b>					DATUM: WGS 84			
<b>16th St NE and 41st Ave NE</b>					LATITUDE: 47.652930	LONGITUDE: -99.664854		
<b>Fessenden, North Dakota</b>					START DATE: 09/05/24	END DATE: 09/05/24		
DRILLER: V.Burnham	LOGGED BY: C.Mathiason		SURFACE ELEVATION: 1606.6 ft		RIG: 5702	METHOD: 3 1/4" HSA	SURFACING: Grass	WEATHER: Sunny, 85°
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q <sub>p</sub> tsf	MC %	Tests or Remarks	
1605.6 1.0		LEAN CLAY (CL), trace Sand, trace roots, dark brown, moist (TOPSOIL)		AU		17		
		SANDY LEAN CLAY (CL), trace Gravel, dark brown, moist (GLACIAL TILL)		AU		16	LL=26, PL=14, PI=12	
1597.6 9.0				AU		17		
1596.6 10.0		SILTY SAND (SM), fine to coarse-grained, trace Gravel, brown, wet (GLACIAL OUTWASH)		AU			Water observed at 9.0 feet while drilling.	
		END OF BORING					Water observed at 10.0 feet immediately after withdrawal of auger.	
		Boring then backfilled with auger cuttings						

See Descriptive Terminology sheet for explanation of abbreviations

<b>Project Number B2407491</b> <b>Geotechnical Evaluation</b> <b>Fessenden Wastewater Lagoon Improvements</b> <b>16th St NE and 41st Ave NE</b> <b>Fessenden, North Dakota</b>					BORING: <b>ST-07</b>		
					LOCATION: Captured with RTK GPS.		
					DATUM: WGS 84		
					LATITUDE: 47.646349	LONGITUDE: -99.663997	
DRILLER: V.Burnham	LOGGED BY: C.Mathiason	START DATE: 09/05/24	END DATE: 09/05/24				
SURFACE ELEVATION: 1604.6 ft	RIG: 5702	METHOD: 3 1/4" HSA	SURFACING: Grass	WEATHER: Sunny, 85°			
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q <sub>p</sub> tsf	MC %	Tests or Remarks
1603.6 1.0		LEAN CLAY (CL), trace Sand, trace roots, dark brown, moist (TOPSOIL)		AU		9	P200=25%
		CLAYEY SAND (SC), fine to coarse-grained, trace Gravel, brown, moist (GLACIAL TILL)		AU			
1599.6 5.0		SANDY LEAN CLAY (CL), trace Gravel, brown and gray, moist (GLACIAL TILL)		AU		20	
1595.6 9.0		CLAYEY SAND (SC), fine to coarse-grained, trace Gravel, brown and gray, wet (GLACIAL TILL)		AU		19	
1594.6 10.0		END OF BORING					Water observed at 8.0 feet while drilling.
		Boring then backfilled with auger cuttings					Water observed at 6.0 feet immediately after withdrawal of auger.

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>A</sup>				Soil Classification		
				Group Symbol	Group Name <sup>B</sup>	
Coarse-grained Soils (more than 50% retained on No. 200 sieve)	Gravels (More than 50% of coarse fraction retained on No. 4 sieve)	Clean Gravels (Less than 5% fines <sup>C</sup> )	$C_u \geq 4$ and $1 \leq C_c \leq 3^D$	GW	Well-graded gravel <sup>E</sup>	
			$C_u < 4$ and/or ( $C_c < 1$ or $C_c > 3$ ) <sup>D</sup>	GP	Poorly graded gravel <sup>E</sup>	
		Gravels with Fines (More than 12% fines <sup>C</sup> )	Fines classify as ML or MH	GM	Silty gravel <sup>EFG</sup>	
			Fines Classify as CL or CH	GC	Clayey gravel <sup>EFG</sup>	
	Sands (50% or more coarse fraction passes No. 4 sieve)	Clean Sands (Less than 5% fines <sup>H</sup> )	$C_u \geq 6$ and $1 \leq C_c \leq 3^D$	SW	Well-graded sand <sup>I</sup>	
			$C_u < 6$ and/or ( $C_c < 1$ or $C_c > 3$ ) <sup>D</sup>	SP	Poorly graded sand <sup>I</sup>	
		Sands with Fines (More than 12% fines <sup>H</sup> )	Fines classify as ML or MH	SM	Silty sand <sup>FGI</sup>	
			Fines classify as CL or CH	SC	Clayey sand <sup>FGI</sup>	
Fine-grained Soils (50% or more passes the No. 200 sieve)	Silts and Clays (Liquid limit less than 50)	Inorganic	PI > 7 and plots on or above "A" line <sup>J</sup>	CL	Lean clay <sup>KLM</sup>	
			PI < 4 or plots below "A" line <sup>J</sup>	ML	Silt <sup>KLM</sup>	
		Organic	Liquid Limit – oven dried	<0.75	OL	Organic clay <sup>KLMN</sup>
			Liquid Limit – not dried		OH	Organic silt <sup>KLMO</sup>
	Silts and Clays (Liquid limit 50 or more)	Inorganic	PI plots on or above "A" line	CH	Fat clay <sup>KLM</sup>	
			PI plots below "A" line	MH	Elastic silt <sup>KLM</sup>	
		Organic	Liquid Limit – oven dried	<0.75	OH	Organic clay <sup>KLM P</sup>
			Liquid Limit – not dried		OH	Organic silt <sup>KLM Q</sup>
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor			PT	Peat	

- A. Based on the material passing the 3-inch (75-mm) sieve.
- B. If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
- C. Gravels with 5 to 12% fines require dual symbols:  
GW-GM well-graded gravel with silt  
GW-GC well-graded gravel with clay  
GP-GM poorly graded gravel with silt  
GP-GC poorly graded gravel with clay
- D.  $C_u = D_{60} / D_{10}$        $C_c = (D_{30})^2 / (D_{10} \times D_{60})$
- E. If soil contains  $\geq 15\%$  sand, add "with sand" to group name.
- F. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
- G. If fines are organic, add "with organic fines" to group name.
- H. Sands with 5 to 12% fines require dual symbols:  
SW-SM well-graded sand with silt  
SW-SC well-graded sand with clay  
SP-SM poorly graded sand with silt  
SP-SC poorly graded sand with clay
- I. If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.
- J. If Atterberg limits plot in hatched area, soil is CL-ML, silty clay.
- K. If soil contains 15 to < 30% plus No. 200, add "with sand" or "with gravel", whichever is predominant.
- L. If soil contains  $\geq 30\%$  plus No. 200, predominantly sand, add "sandy" to group name.
- M. If soil contains  $\geq 30\%$  plus No. 200 predominantly gravel, add "gravelly" to group name.
- N. PI  $\geq 4$  and plots on or above "A" line.
- O. PI < 4 or plots below "A" line.
- P. PI plots on or above "A" line.
- Q. PI plots below "A" line.



<b>DD</b> Dry density, pcf	<b>q<sub>p</sub></b> Pocket penetrometer strength, tsf
<b>WD</b> Wet density, pcf	<b>q<sub>u</sub></b> Unconfined compression test, tsf
<b>P200</b> % Passing #200 sieve	<b>LL</b> Liquid limit
<b>MC</b> Moisture content, %	<b>PL</b> Plastic limit
<b>OC</b> Organic content, %	<b>PI</b> Plasticity index

**Particle Size Identification**

- Boulders..... over 12"
- Cobbles..... 3" to 12"
- Gravel  
Coarse..... 3/4" to 3" (19.00 mm to 75.00 mm)  
Fine..... No. 4 to 3/4" (4.75 mm to 19.00 mm)
- Sand  
Coarse..... No. 10 to No. 4 (2.00 mm to 4.75 mm)  
Medium..... No. 40 to No. 10 (0.425 mm to 2.00 mm)  
Fine..... No. 200 to No. 40 (0.075 mm to 0.425 mm)
- Silt..... No. 200 (0.075 mm) to .005 mm
- Clay..... < .005 mm

**Relative Proportions<sup>L-M</sup>**

- trace..... 0 to 5%
- little..... 6 to 14%
- with.....  $\geq 15\%$

**Inclusion Thicknesses**

- lens..... 0 to 1/8"
- seam..... 1/8" to 1"
- layer..... over 1"

**Apparent Relative Density of Cohesionless Soils**

- Very loose ..... 0 to 4 BPF
- Loose ..... 5 to 10 BPF
- Medium dense..... 11 to 30 BPF
- Dense..... 31 to 50 BPF
- Very dense..... over 50 BPF

**Consistency of Cohesive Soils      Blows Per Foot      Approximate Unconfined Compressive Strength**

- Very soft..... 0 to 1 BPF..... < 0.25 tsf
- Soft..... 2 to 4 BPF..... 0.25 to 0.5 tsf
- Medium..... 5 to 8 BPF..... 0.5 to 1 tsf
- Stiff..... 9 to 15 BPF..... 1 to 2 tsf
- Very Stiff..... 16 to 30 BPF..... 2 to 4 tsf
- Hard..... over 30 BPF..... > 4 tsf

**Moisture Content:**

- Dry:** Absence of moisture, dusty, dry to the touch.
- Moist:** Damp but no visible water.
- Wet:** Visible free water, usually soil is below water table.

**Drilling Notes:**

**Blows/N-value:** Blows indicate the driving resistance recorded for each 6-inch interval. The reported N-value is the blows per foot recorded by summing the second and third interval in accordance with the Standard Penetration Test, ASTM D1586.

**Partial Penetration:** If the sampler could not be driven through a full 6-inch interval, the number of blows for that partial penetration is shown as #/x" (i.e. 50/2"). The N-value is reported as "REF" indicating refusal.

**Recovery:** Indicates the inches of sample recovered from the sampled interval. For a standard penetration test, full recovery is 18", and is 24" for a thinwall/shelby tube sample.

**WOH:** Indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

**WOR:** Indicates the sampler penetrated soil under weight of rods alone; hammer weight and driving not required.

**Water Level:** Indicates the water level measured by the drillers either while drilling ( ), at the end of drilling ( ), or at some time after drilling ( ).

**Sample Symbols**

Standard Penetration Test	Rock Core
Modified California (MC)	Thinwall (TW)/Shelby Tube (SH)
Auger	Texas Cone Penetrometer
Grab Sample	Dynamic Cone Penetrometer

526 10th St NE, Suite 300  
PO Box 485  
West Fargo, ND 58078  
Phone: 701-232-8701

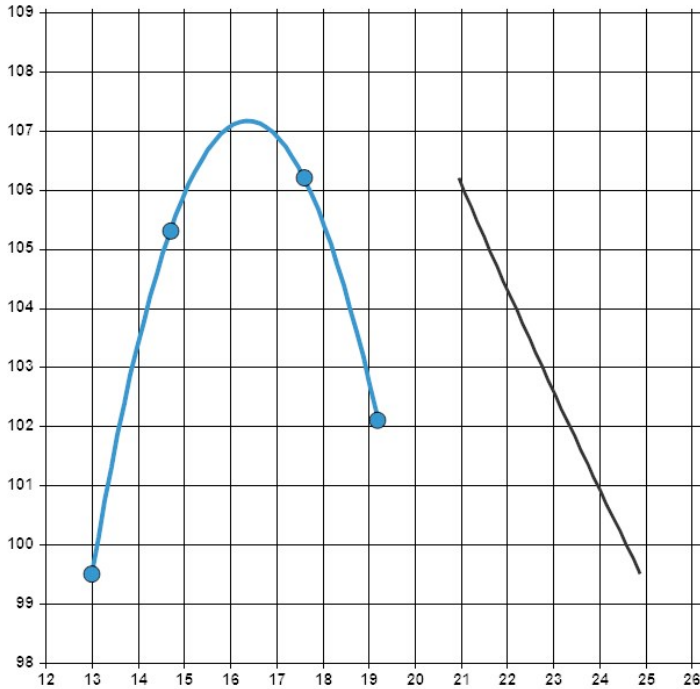
**Client:**  
Apex Engineering Group, Inc.  
4733 Amber Valley Pkwy S  
Fargo, ND 58104

**Project:**  
B2407491  
Fessenden Wastewater Lagoon Improvements  
16th St NE and 41st Ave NE  
Fessenden, ND

**Sample Information**

<b>Sample Number:</b>	621821	<b>Alternate ID:</b>	P-01
<b>Boring Number:</b>	ST-06	<b>Depth (ft):</b>	1' - 6'
<b>Sampling Method:</b>	Auger Boring ASTM D1452	<b>Sampled By:</b>	Drill Crew
<b>Sample Date:</b>	09/05/2024		
<b>Received Date:</b>	09/23/2024	<b>Lab:</b>	526 10th Street NE, Suite 300, West Fargo, ND
<b>Tested Date:</b>	10/01/2024	<b>Tested By:</b>	Lage, Andrew

**Laboratory Data**



<b>Proctor ID:</b>	P-01	
<b>Maximum Dry Density (pcf):</b>	107.2	
<b>Optimum Moisture (%):</b>	16.4	
<b>Method:</b>	Method A	
<b>Preparation Method:</b>	Moist	
<b>Rammer Type:</b>	Manual Round	
<b>Specific Gravity:</b>	2.65	
<b>Specific Gravity Source:</b>	Assumed	
<b>Retained On 3/4 (%):</b>	0	<b>Retained On 3/8 (%):</b> 0
<b>Retained On #4 (%):</b>	1	<b>Passing #4 (%):</b> 99

**Classification:** Sandy Lean Clay with trace Gravel (CL), Brown

**General**

**Fessenden Wastewater Lagoon Improvements**  
**City of Fessenden, North Dakota**  
**Apex Project# 24.457.0150**

**Section 00850 - STORM WATER PERMIT INFORMATION**

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Any project that involves land disturbance (clearing, grading, or excavating) greater than or equal to one acre requires a North Dakota Pollution Discharge Elimination System (NDPDES) permit. The Contractor is required by the permit to adhere to the conditions of the storm water permit and storm water pollution prevention plan as it relates to controlling erosion and sedimentation during construction activities, maintaining erosion control devices, conducting inspections, and maintaining appropriate records.

The NDPDES Permit Application and additional information can be found at:

[https://deq.nd.gov/WQ/2\\_NDPDES\\_Permits/7\\_Stormwater/StW.aspx](https://deq.nd.gov/WQ/2_NDPDES_Permits/7_Stormwater/StW.aspx)

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**SECTION 1 – GENERAL**

## 1.01 SPECIFICATION INCLUDES

- A. Construction Sequence and Constraints

## 1.02 RELATED SPECIFICATIONS

- A. Section 00520 – Agreement
- B. Section 01010 – Summary of Work
- C. Section 01300 – Submittals

## 1.03 CONSTRUCTION SEQUENCE AND CONSTRAINTS

- A. General constraints within which the Contractor shall cooperatively schedule the Work include, but are not limited to, the following:
  - 1. All Work must be completed during the time set forth in the Bid Form and Agreement and within the construction windows identified herein.
  - 2. All excavations must be within the limits shown on the Drawings.
  - 3. This Work will require the shutdown of existing facilities and the provision of temporary facilities to maintain the system. Contractor shall submit a detailed plan for accomplishing this at least 2 weeks prior to starting the Work. Any temporary shutdown of the facilities shall be coordinated with the Owner and Engineer at least 2 weeks prior.
  - 4. Contractor shall submit a detailed construction sequence identifying all dates when interruption, temporary or bypass, will occur.
- B. Constraints affecting specific areas of the Work and specific Work sequencing requirements are described in the following sections:
  - 1. At least one cell of the lagoon system must always be operational. Contractor will submit a detailed plan/schedule for accomplishing this.
  - 2. During interruption of lagoon operations and prior to any temporary bypass system being operational, any sanitary waste flow coming into the lift station shall be pumped to a transport container on the surface and shall be disposed of properly in accordance with the North Dakota Department of Environmental Quality's requirements. The lift station is in Fessenden at the west end of Railway Street South. A map will be provided if needed. The lift station has a design flow of 400 gpm at 55 ft TDH.
  - 3. Pump curves indicate that the lift station may be capable of pumping to Cell 2. The contractor may want to consider using the lift station to pump to Cell 2 in lieu of a temporary bypass system as described in Section 02710.
  - 4. Construction shall begin after the spring discharge of the lagoons, which will happen approximately in mid-May, depending on the weather and NDDEQ approval. Coordinate with owner and engineer.
  - 5. Any sludge removed from one cell during construction shall be deposited in the cell not being worked on. No sludge shall be removed from the lagoons unless the Contractor acquires a biosolids permit from the EPA and the sludge is disposed of according to federal regulations.

6. All areas disturbed during construction will be returned to their original condition by the General Contractor.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Schedule of Values / Allowances
- B. Applications for Payment
- C. Change Procedures

**1.02 RELATED SPECIFICATIONS**

- A. Section 01027 – Applications for Payment
- B. Section 01300 – Submittals
- C. Section 01600 – Material and Equipment
- D. Section 01630 – Product Options and Substitutions

**1.03 SCHEDULE OF VALUES / ALLOWANCES**

- A. Contractor shall submit to the Engineer a typed Schedule of Values on EJCDC Form C-620. Other forms, such as the Contractor's standard form or other electronic media printout, shall be submitted to the Engineer for approval for use.
- B. Contractor shall submit the Schedule of Values in triplicate or electronically within fifteen (15) days after the Owner-Contractor Agreement.
- C. Contractor shall utilize the Table of Contents of the Specifications as the format for the Schedule of Values. Identify each line item with number and title of the major Specification section. General Conditions, such as mobilization, bonds, and insurance shall be identified in a separate line item.
- D. Revise the Schedule of Values to include approved Change Orders with each Application for Payment.
- E. General Contractor shall provide a separate line item allowance for performing services associated with Construction Coordinator.

**1.04 APPLICATIONS FOR PAYMENT**

- A. Submit four (4) copies of each application on EJCDC C-620 or other prior approved form. Electronic submittal of applications for payment is acceptable.
- B. Contractor shall utilize the Schedule of Values for listing items in the Application for Payment.
- C. Payment shall be made approximately every 30 days. Contractor shall adhere to Owner's and Engineer's schedules for submission of Applications for Payment. Payment schedule may be dependent upon the City receiving funds from the agencies involved in funding this project.

**1.05 CHANGE PROCEDURES**

- A. The Engineer may advise of minor changes in the Work not involving an adjustment to Contract Price or Contract Times as authorized by issuing supplemental instructions.



- B. The Engineer may issue a Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications, and a change in Contract Times for executing the change. Contractor will prepare and submit a proposal within five (5) days.
- C. Stipulated Price Change Order: Based on Notice of Change and Contractor's fixed price proposal or quotation.
- D. Unit Price Change Order: For pre-determined unit prices and quantities, the Change order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Work Change Directive. Changes in Contract Price or Contract Time will be computed as specified for Time and Material Change Order.
- E. Work Change Directive: Engineer may issue a directive signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Price or Contract Time. Contractor shall promptly execute the Change.
- F. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Engineer will determine the change allowable in Contract Price and Contract Time as provided in the Contract Documents.
- G. Maintain detailed records of work done on Time and Material bases. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- H. Change Order Form: Utilize EJCDC C941 or other form with the approval of the Engineer.
- I. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

## **SECTION 2 – PRODUCTS**

**(NOT USED)**

## **SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Procedures for preparation of Applications for Payment
- B. Procedures for submittal of Applications for Payment
- C. Procedures for submitting substantiating data.

**1.02 RELATED SPECIFICATIONS**

- A. Section 00520 - Agreement
- B. Section 00700 – General Conditions
- C. Section 01019 – Contract Considerations
- D. Section 01300 – Submittals
- E. Section 01700 – Contract Closeout

**1.03 APPLICATION FORMAT**

- A. All Applications for Payment shall be submitted on EJCDC Form C-620, including all continuation sheets.
- B. Alternative Formats will be acceptable when prior approval is granted by the Engineer.

**1.04 PREPARATION OF APPLICATIONS FOR PAYMENT**

- A. All required information shall be presented on an electronic media printout.
- B. Applications for Payment shall be executed with the signature of an authorized officer.
- C. Applications for Payment shall utilize data from the approved Schedule of Values. Dollar value shall be shown in separate columns for each portion of Work performed and also for stored materials.
- D. All approved Change Orders shall be shown on a continuation sheet and shall list the Change Order number and dollar value of the Change Order.
- E. The Final Application for Payment shall be prepared as outlined in Section 01700 – Contract Closeout.

**1.05 SUBMITTAL OF APPLICATIONS FOR PAYMENT**

- A. Contractor shall submit four (4) original Applications for Payment for each payment period. The payment period shall be as outlined in Section 00520 – Agreement. Electronic submittal of Applications for Payment is acceptable.
- B. Contractor shall submit an updated Construction Schedule with each Application for Payment. Failure to do so may delay processing of the Application for Payment.
- C. All Applications for Payment shall be accompanied by a Transmittal Letter as outlined in Section 01300 – Submittals.

**1.06 SUBSTANTIATING DATA**

- A. Contractor shall submit adequate data to justify any dollar amounts shown on the Applications for Payment.

- B. Contractor shall provide Engineer with access to inspect and quantify any Stored Material shown on the Applications for Payment.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Project Coordination
- B. Preconstruction Conference
- C. Construction Progress Meetings

**1.02 RELATED SPECIFICATIONS**

- A. Section 01027 – Applications for Payment
- B. Section 01700 – Contract Closeout

**1.03 PROJECT COORDINATION**

- A. The Construction Coordinator for the Project shall be provided by the General Contractor for all Contracts associated with the Project. In this capacity, the duties and responsibilities in scheduling and performance of the Work shall be as follows:
  - 1. Allocate and coordinate the use of a site for field offices/construction trailers, site access, traffic, and parking.
  - 2. Install and coordinate the use of temporary utilities and construction facilities.
  - 3. Coordinate field engineering and layout of the Work.
  - 4. Coordinate the Work of individual Contractors and Subcontractors.
- B. Coordinate scheduling, submittals and Work of the various Sections of the Specifications to ensure efficient and orderly sequencing of the installation of interdependent portions of the Work.
- C. Verify that the utility requirements of equipment are compatible with the utilities. Coordinate the Work of Sections having interdependent responsibilities for installing, connection to, and placing in service, this equipment.
- D. Coordinate any space requirements of Work that is shown diagrammatically on the drawings. Use space to maximize accessibility for other installations, maintenance of equipment, and repair of equipment.
- E. Coordinate the completion and cleanup of the Work of separate Sections in preparation of Substantial Completion and for portions of the Work designated for Owner occupancy.
- F. After Owner occupancy, coordinate access for correction of deficiencies and Work not in accordance with the Contract Documents so as to minimize disruption of Owner's activities.

**1.04 PRECONSTRUCTION CONFERENCE**

- A. After the issuance of the Notice of Award and execution of the Agreement, Engineer will schedule a Preconstruction Conference.
- B. Attendance will be mandatory for the following:
  - 1. Engineer Representatives
  - 2. Owner Representatives
  - 3. Contractor Representatives
  - 4. Major Subcontractor Representatives
- C. Engineer will prepare an Agenda that will include, at a minimum, the following:

1. Submission of executed Bonds and Insurance Certificates.
2. Distribution of Contract Documents
3. Submission of a list of Subcontractors, Product Lists, Schedule of Values, and Preliminary Progress Schedule.
4. Designation of personnel representing the parties.
5. Procedures for field decisions, submittals, substitutions, applications for payments, requests for information, requests for proposals, Change Orders, O&M Manuals, project closeout procedures, and other contractual items.
6. Contractor's Scheduling.

1.05 CONSTRUCTION PROGRESS MEETINGS

- A. Engineer will schedule and administer construction progress meetings throughout the progress of the Work. Meeting intervals may be variable to coincide with the execution of the work but will not be less often than every two weeks.
- B. Engineer will arrange the meeting, prepare an agenda, preside over the meeting, record minutes and distribute those minutes to all affected by decisions made at the meeting.
- C. Contractor shall ensure that the Job superintendent, major subcontractors, and major suppliers are in attendance, as appropriate for agenda items.
- D. The Agenda will include, at a minimum, the following items:
  1. Review the Minutes of the Previous Meeting.
  2. Review of Work progress.
  3. Field Observations, issues, and decisions.
  4. Discussion of issues which may impede progress.
  5. Status of submittals.
  6. Status of delivery schedules
  7. Upcoming Work.
  8. Project coordination.
  9. Discussion on quality of Work.
  10. Other items related to the Work.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Facility Control
- B. Private Land
- C. Control of Other Work

**1.02 RELATED SPECIFICATIONS**

- A. Section 01010 – Summary of Work
- B. Section 01015 – Sequence and Constraints of Construction
- C. Section 01600 – Material and Equipment
- D. Section 02200 – Earthwork
- E. Section 02220 – Trenching, Backfilling and Compacting

**1.03 FACILITY**

- A. Furnish equipment and supplies which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will ensure the completion of the Work within the Contract Time. If at any time such equipment appears to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, Engineer may order the Contractor to increase the efficiency, change the character or increase the equipment and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

**1.04 PRIVATE LAND**

- A. Do not enter or occupy private land outside of easements, except by permission of the land owner.

**1.05 PIPE LOCATIONS**

- A. Locate pipelines substantially as indicated on the Drawings. The Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

**1.06 OPEN EXCAVATIONS**

- A. Adequately safeguard all open excavations by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons and damage to property. Provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Remove bridges provided for access during construction when no longer required. The length or size of excavation will be controlled by the particular surrounding conditions, but shall always be confined to the limits prescribed by the Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point,

the Engineer may require special construction procedures such as limiting the length of the open trench, prohibiting stacking excavated material in the street and requiring that the trench shall not remain open overnight.

- B. Take precautions to prevent injury to the public due to open trenches. Provide adequate light at all trenches, excavated material, equipment, or other obstacles which could be dangerous to the public at night.

#### 1.07 TEST PITS

- A. Excavate test pits, at the direction of the Engineer, to locate underground pipelines or structures in advance of the construction. Backfill test pits immediately after their purpose has been satisfied and restore and maintain the surface in a manner satisfactory to the Engineer.

#### 1.08 MAINTENANCE OF TRAFFIC

- A. Detours around construction will be subject to the approval of the Owner and the Engineer. Where detours are permitted, provide all necessary barricades and signs as required to divert the flow of traffic. Expedite construction operations while traffic is detoured. Periods when traffic is being detoured will be strictly controlled by the Owner.
- B. Take precautions to prevent injury to the public due to open trenches. Site security is the responsibility of the Contractor.

#### 1.09 CARE AND PROTECTION OF PROPERTY

- A. Be responsible for the preservation of all public and private property and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, restore such property to a condition similar or equal to that existing before the damage was done, or make good the damage in other manner acceptable to the Engineer.

#### 1.10 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. Assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the Drawings. Carefully support and protect all such structures and utilities from injury of any kind. Immediately repair any damage resulting from the construction operations.
- B. Assistance will be given the Contractor in determining the location of existing services. The Contractor, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, electrical lines, drain lines and sewers). Maintain services to buildings and pay costs or charges resulting from damage thereto.
- C. If, in the opinion of the Engineer, permanent relocation of a utility is required, the Engineer may direct the Contractor, in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work under Article 11 of the Supplementary Conditions. If relocation of a privately owned utility is required, the Engineer

will notify the Utility to perform the work as expeditiously as possible. Cooperate with the Utility. No claim for delay will be allowed due to such relocation.

- D. Notify all utility companies in writing at least 48 hours (excluding Saturdays, Sundays, and legal holidays) before excavating in any public way. Also notify North Dakota One Call, telephone 800.495.0555 at least 48 hours prior to the start of work.

#### 1.11 WATER FOR CONSTRUCTION PURPOSES

- A. Once public water supply is available, the Contractor may be allowed to use water for a charge for construction purposes. The Contractor will be required to put down a \$100 refundable deposit for a water meter. The meter shall be installed by the City. After completion of the work, the City will remove the meter and bill the Contractor accordingly for the water used.
- B. The express approval of the Owner shall be obtained before water is used. Waste of water shall be sufficient cause for withdrawing the privilege of unrestricted use. Hydrants shall only be operated under the supervision of the Owner's personnel.

#### 1.12 MAINTENANCE OF FLOW

- A. Provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and immediately cart away and remove all offensive matter. Discuss the entire procedure of maintaining existing flow with the Engineer well in advance of the interruption of any flow.

#### 1.13 COOPERATION WITHIN THIS CONTRACT

- A. The Contractor and his subcontractors shall cooperate with all firms or persons authorized to perform all Work under this Contract, and shall assist in incorporating the work of other trades where necessary or required.
- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

#### 1.14 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the work, keep the site of operations as clean and neat as possible. Dispose of all residue resulting from the construction work and, at the conclusion of the work, remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and leave the entire site of the work in a neat and orderly condition.
- B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, comply with all applicable Federal, State and local laws and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and in other related Sections.
- C. Disposal of excess excavated material in wetlands, stream corridors and plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the Contractor or any person employed by the Contractor, will be brought to the attention of the responsible regulatory agencies, with a request that appropriate action



be taken against the offending parties. The Contractor will be required to remove the fill and restore the area impacted at no increase in the Contract Price.

**SECTION 2 – PRODUCTS**

(NOT USED)

**SECTION 3 - EXECUTION**

(NOT USED)

**END OF SECTION**

**SECTION 1 – GENERAL**

1.01 SPECIFICATIONS INCLUDES

- A. Construction Surveying and Staking
- B. Contractor’s Responsibilities

1.02 RELATED SPECIFICATIONS

- A. Division 02 – Site Construction
- B. Division 03 – Concrete

1.03 CONSTRUCTION SURVEYING AND STAKING

- A. Owner shall provide engineering surveys for establishing reference and control points, one (1) time, as needed for the Contractor to proceed with the Work.

1.04 CONTRACTOR’S RESPONSIBILITIES

- A. Contractor shall provide any further construction staking required for laying out the work.
- B. Contractor shall take measures to preserve all stakes and markings. Control and reference stakes shall be preserved for the entire project duration.
- C. Any restaking of reference or control points shall be at the Contractor’s expense.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Environmental Protection Measures
- B. Disturbance Limitations to Existing Areas

**1.02 RELATED SPECIFICATIONS**

- A. Section 01010 – Summary of Work
- B. Section 01015 – Sequence and Constraints of Construction
- C. Section 01300 – Submittals
- D. Section 01600 – Material and Equipment
- E. Section 02270 – Slope Protection and Erosion Control
- F. Section 02950 - Seeding

**1.01 SCOPE OF WORK**

- A. Furnish all labor, materials and equipment and perform all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Section, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants.
- C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area. Specific requirements for erosion and sedimentation controls are specified in Section 02270.
- D. This Section is intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings. These are general guidelines. It is the Contractor's responsibility to determine the specific construction techniques to meet these guidelines.

**1.02 APPLICABLE REGULATIONS**

- A. Comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

**1.03 NOTIFICATIONS**

- A. The Engineer will notify the Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the Contractor in writing, through the Engineer, of any non-compliance with State or local requirements. After receipt of such notice from the Engineer or from the regulatory agency through the Engineer, immediately take corrective

action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

#### 1.04 IMPLEMENTATION

- A. Prior to commencement of the work, meet with the Engineer to develop mutual understandings relative to compliance with these provisions and administration of the environmental pollution control program.
- B. Remove temporary environmental control features, when approved by the Engineer and incorporate permanent control features into the project at the earliest practicable time.

### SECTION 2 – PRODUCTS

(NOT USED)

### SECTION 3 - EXECUTION

#### 3.01 EROSION CONTROL

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Offsite surface water shall be diverted around the site, to a downstream channel ahead of siltation barriers. Flow of surface water into excavated areas shall be prevented. Ditches around construction area shall also be used to carry away water resulting from dewatering of excavated areas. At the completion of the work, ditches shall be backfilled and the ground surface restored to original condition.

#### 3.02 PROTECTION OF STREAMS AND SURFACE WATERS

- A. Take all precautions to prevent, or reduce to a minimum, any damage to any stream, wetland, or surface water from pollution by debris, sediment or other material, or from the manipulation of equipment and/or materials in or near such streams. Water that has been used for washing or processing, that contains oils or sediments that will reduce the quality of the water in the stream, shall not be directly returned to the stream. Divert such waters through a settling basin or filter before being directed into streams or surface waters.
- B. Do not discharge water from dewatering operations directly into any live or intermittent stream, channel, wetlands, surface water or any storm sewer. Water from dewatering operations shall be treated by filtration, settling basins, or other approved method to reduce the amount of sediment contained in the water to allowable levels.
- C. Take all preventative measures to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action plan approved by the North Dakota Department of Environmental Quality. Submit two copies of approved contingency plans to the Engineer.
- D. Water being flushed from structures or pipelines after disinfection, with a Cl<sub>2</sub> residue of 2 mg/l or greater shall be treated with a dechlorination solution, in a method approved by the Engineer, prior to discharge.

#### 3.03 PROTECTION OF LAND RESOURCES

- A. Restore land resources within the project boundaries and outside the limits of permanent work to a condition, after completion of construction that will appear to be natural and not

- detract from the appearance of the project. Confine all construction activities to areas shown on the Drawings.
- B. Outside of areas requiring earthwork for the construction of the new facilities, do not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the Engineer. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall in any event be responsible for any damage resulting from such use.
  - C. Before beginning operations near them, protect trees that may possibly be defaced, bruised, injured, or otherwise damaged by the construction equipment, dumping or other operations, by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly.
  - D. Any trees or other landscape features scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to their original condition. The Engineer will decide the method of restoration to be used and whether damaged trees shall be treated and healed or removed and disposed of.
    - 1. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-in in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.
    - 2. Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the Engineer, shall be immediately removed and replaced.
  - E. The locations of the Contractor's storage and other construction buildings required temporarily in the performance of the work, shall be cleared portions of the job site or areas to be cleared as shown on the Drawings and approved by the Engineer and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Drawings showing storage facilities shall be submitted for approval of the Engineer.
  - F. If the Contractor proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he shall submit the following for approval at least ten days prior to scheduled start of such temporary work.
    - 1. A layout of all temporary roads, excavations, embankments and drainage to be constructed within the work area.
    - 2. Details of temporary road construction.
    - 3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
    - 4. A landscaping drawing showing the proposed restoration of the area. Indicate the proposed removal of any trees and shrubs outside the limits of existing clearing area. Indicate locations of guard posts or barriers required to control vehicular traffic and protect trees and shrubs to be maintained undamaged. The Drawing shall provide for the obliteration of construction scars as such and shall provide for a natural appearing final condition of the area. Modification of the Contractor's approved drawings shall be made only with the written approval of the Engineer. No unauthorized road construction, excavation or embankment construction including disposal areas will be permitted.
  - G. Remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess of waste materials, or any other vestiges of construction as directed by the Engineer. It is anticipated that

excavation, filling and plowing of roadways will be required to restore the area to near natural conditions which will permit the growth of vegetation thereon. The disturbed areas shall be prepared and seeded as described in Section 02950, or as approved by the Engineer.

- H. All debris and excess material will be disposed of outside wetland or floodplain areas in an environmentally sound manner.

#### 3.04 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust Control - Maintain all excavations, embankment, stockpiles, access roads, plant sites, waste areas, borrow areas and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded and which would cause a hazard or nuisance to others.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the Engineer.
- D. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor shall have sufficient competent equipment on the job to accomplish this. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the Engineer.

#### 3.05 NOISE CONTROL

- A. Make every effort to minimize noises caused by the construction operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with Federal and State regulations.

#### 3.06 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. Maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 DESCRIPTION OF REQUIREMENTS**

- A. This Section specifies the general methods and requirements of submissions applicable to Shop Drawings, Product Data, Samples, Construction Photographs, and Construction or Submittal Schedules. Detailed submittal requirements are specified in the technical Sections. All submittals shall be clearly identified by reference to Section Number, Paragraph, Drawing Number, or Detail as applicable. Submittals shall be clear and legible and of sufficient size for presentation of data.

**1.02 SHOP DRAWINGS, PRODUCT DATA, SAMPLES****A. Shop Drawings**

1. The Contractor shall submit preliminary schedule of Shop Drawing and Sample Submittals (Schedule of Submittals) which will list each required submittal and the times for submitting, reviewing and processing such submittals. The Schedule of Submittals shall be listed in order of specification section and by the 10-digit submittal identification number.
2. Shop drawings as specified in individual Sections include, custom-prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shopwork manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certifications, as applicable to the work.
3. All shop drawings submitted by subcontractors shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
4. Check all subcontractor's shop drawings regarding measurements, size of members, materials and details to make sure that they conform to the intent of the Drawings and related Sections. Return shop drawings found to be inaccurate or otherwise in error to the subcontractors for correction before submission thereof.
5. All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted.
6. Submittals for equipment specified under this Contract shall include a listing of all installations where identical or similar equipment has been installed and been in operation for a period of at least one year.

**B. Product Data**

1. Product data as specified in individual Sections include, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring

diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing and printed product warranties, as applicable to the work.

C. Samples

1. Samples specified in individual Sections include, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the work.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Contractor to field verify elevation, coordinates and pipe material for pipe tie-in to pipeline or structure prior to the preparation of shop drawings.
- B. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:
  1. Field measurements
  2. Field construction criteria
  3. Catalog numbers and similar data
  4. Conformance with related Sections
- C. Edit submittals so that the submittal specifically applies to only the equipment furnished. Neatly cross out all extraneous text, options, models, etc. that do not apply to the equipment being furnished, so that the information remaining is only applicable to the equipment being furnished.
- D. Each shop drawing, sample and product data submitted by the Contractor shall have affixed to it the following Certification Statement including the Contractor's Company name and signed by the Contractor: "Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements."
- E. Shop drawings and product data sheets 11-inches x 17-inches and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The cover sheet shall fully describe the packaged data and include a listing of all items within the package. Provide to the Resident Project Representative a copy of each transmittal sheet for shop drawings, product data and samples at the time of submittal to the Engineer. Shop Drawings that are not stamped will not be reviewed.
- F. The Contractor shall utilize a 10-character submittal identification numbering system in the following manner:
  1. The first character shall be a D, S, M, or R, which represents Shop/Working Drawing and other Product Data (D), Sample (S), Operating/ Maintenance Manual (M), or Request for Information (R).
  2. The next five digits shall be the applicable Section Number.
  3. The next three digits shall be the numbers 001 to 999 to sequentially number each submittal.



4. The last character shall be a letter, A to Z, indicating the submission, or resubmission of the same Drawing, i.e., "A=1st submission, B=2nd submission, C=3d submission, etc. A typical submittal number would be as follows:

D-03300-008-B

D = Shop Drawing

03300 = Section for Concrete

008 = The eighth initial submittal under this contract

B = The second submission (first resubmission) of that particular shop drawing

- G. Notify the Engineer in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.
- H. The review and approval of shop drawings, samples or product data by the Engineer shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the Contractor and the Engineer will have no responsibility therefor.
- I. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval or qualified approval of such item. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The Owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- J. Project work, materials, fabrication, and installation shall conform to approved shop drawings, applicable samples, and product data.

#### 1.04 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- B. All submittals shall be delivered to: **Susan Hazelett, PE, Apex Engineering Group, Inc., 600 S. 2<sup>nd</sup> Street, Suite 145, Bismarck, ND 58504.**
- C. Each submittal, appropriately coded, will be returned within 28 calendar days following receipt of submittal by the Engineer.
- D. Schedule delays:
  1. No adjustment of Contract Times or Contract Price will be allowed due to Engineer's review of submittals, unless all of the following criteria are met:
    - a. Engineer has failed to review and return first submission within the agreed upon time frame.
    - b. Contractor demonstrates that delay in progress of Work is directly attributable to Engineer's failure to return submittal within time indicated and accepted by Engineer.
- E. Submittal Method and Format:
  1. All submittals shall be submitted in electronic or hard copy format per this section.
  2. Submittals in electronic media format:
    - a. Provide all information in PC-compatible format using Windows operating system as utilized by Owner and Engineer.
    - b. Text and Graphics: Provide text documents and manufacturer's literature in Portable Document Format (PDF).
- F. Number of final, accepted hard copy submittals required:

1. Shop Drawings: Three (3) hard copies, in addition to the number needed by the Contractor.
  2. Product Data: Three (3) hard copies, in addition to the number needed by the Contractor.
  3. Samples: Submit the number stated in the respective Sections.
- G. Submittals shall contain:
1. The date of submission and the dates of any previous submissions.
  2. The Project title and number.
  3. Contractor identification.
  4. The names of:
    - a. Contractor
    - b. Supplier
    - c. Manufacturer
  5. Identification of the product, with the section number, page and paragraph(s).
  6. Field dimensions, clearly identified as such.
  7. Relation to adjacent or critical features of the work or materials.
  8. Applicable standards, such as ASTM or Federal Standards numbers.
  9. Identification of deviations from Contract Documents.
  10. Identification of revisions on resubmittals.
  11. Fabrication drawings: Drawn to scale and dimensioned.
  12. Front, side, and, rear elevations, and top and bottom views, showing all dimensions.
  13. Locations of conduit entrances and access plates.
  14. Component layout and identification.
  15. Weight.
  16. Finish.
  17. Temperature limitations, as applicable.
  18. Nameplate information.
  19. Manufacturer's Certificate of Compliance: Signed by product manufacturer along with supporting reference data, affidavits, and tests, as appropriate.
  20. Manufacturer's printed recommendations for installation of equipment.
  21. Test reports including the following information:
    - a. Test description.
    - b. List of equipment used.
    - c. Name of the person conducting the test.
    - d. Date and time the test was conducted.
    - e. Ambient temperature and weather conditions.
    - f. All raw data collected.
    - g. Calculated results.
    - h. Clear statement if the test passed or failed the requirements stated in Contract Documents.
    - i. Signature of the person responsible for the test.
  22. Samples:
    - a. Submit labeled samples.
    - b. Samples will not be returned.
    - c. Provide samples from manufacturer's standard colors, materials, products, or equipment lines.

- d. Clearly label samples to indicate any that represent non-standard colors, materials, products, or equipment lines and that if selected, will require an increase in Contract Time or Contract Price.
- 23. A blank space suitably sized for Contractor and Engineer stamps.
- 24. Where calculations are required to be submitted by the Contractor, the calculations shall have been checked by a qualified individual other than the preparer. The submitted calculations shall clearly show the names of the preparer and of the checker.
- H. All submittals shall be in English.
- I. For submittals that cover multiple devices used in different areas under the same specification section, the submittal for the individual devices must list the area where the device is used.
- J. Use bookmarks to match the table of contents for each section (tab) and heading. Drawings shall be bookmarked by discipline or area designation or appropriate division.
- K. Use thumbnails optimized for fast web viewing.
- L. Sequentially number pages within the tabbed sections.
  - 1. Submittals that are not fully indexed and tabbed with sequentially numbered pages, or are otherwise unacceptable, will be returned without review.
- M. Attachments:
  - 1. Specification section: Include with each submittal a copy of the relevant specification section.
    - a. Indicate in the left margin, next to each pertinent paragraph, either compliance with a check (✓) or deviation with a consecutive number (1, 2, 3).
    - b. Provide a list of all numbered deviations with a clear explanation and reason for the deviation.

#### 1.05 REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed:
  - 1. as permitting any departure from the Contract requirements;
  - 2. as relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;
  - 3. as approving departures from details furnished by the Engineer, except as otherwise provided herein.
- B. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- C. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements which the Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or Contract Time, the Engineer may return the reviewed drawings without noting an exception.
- D. Submittals will be returned to the Contractor under one of the following codes.

Code 1 - "APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.

Code 2 - "APPROVED AS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

Code 3 - "APPROVED AS NOTED/CONFIRM". This combination of codes is assigned when a confirmation of the notations and comments IS required by the Contractor. The Contractor may, at his own risk, release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the Engineer within 15 calendar days of the date of the Engineer's transmittal requiring the confirmation.

Code 4 - "NOT APPROVED/RESUBMIT" is assigned when the submittal does not meet the intent of the Contract Documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.

Code 5 - "COMMENTS ATTACHED" is assigned where there are comments attached to the returned submittal which provide additional data to aid the Contractor.

Code 6 - "RECEIPT ACKNOWLEDGED" is used in acknowledging receipt of informational submittals that address means and methods of construction such as schedules and work plans, conformance test reports, health and safety plans, etc.

Code 7 - "RECEIPT ACKNOWLEDGED WITH COMMENTS" is used in acknowledging receipt of informational submittals that address means and methods of construction such as schedules and work plans, conformance test reports, health and safety plans, etc. Feedback regarding missing information, conflicting information, or other information that makes it incomplete can be made with comments.

Codes 1 through 4, 6 and 7 designate the status of the reviewed submittal with Code 5 showing there has been an attachment of additional data.

- E. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the Contractor shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions. Contractor responses shall indicate how the Contractor resolved the issue pertaining to each review comment. Responses such as "acknowledged" or "noted" are not acceptable. Any resubmittal that does not contain responses to the Engineer's previous comments shall be returned for Revision and Resubmittal. No further review by the Engineer will be performed until a response for previous comments has been received.
- F. Partial submittals may not be reviewed. The Engineer will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor and will be considered "Not Approved" until resubmitted. The Engineer may at his option

provide a list or mark the submittal directing the Contractor to the areas that are incomplete.

G. Repetitive Review

1. Shop drawings and other submittals will be reviewed no more than twice at the Owner's expense. All subsequent reviews will be performed at times convenient to the Engineer and at the Contractor's expense, based on the Engineer's then prevailing rates. The Contractor shall reimburse the Owner for all such fees invoiced to the Owner by the Engineer. Submittals are required until approved.
2. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Time.

H. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the Contractor shall give written notice thereof to the Engineer at least thirty (30) calendar days prior to release for manufacture.

I. When the shop drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

1.06 DISTRIBUTION

A. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the Engineer. Number of copies shall be as directed by the Engineer, but shall not exceed six.

1.07 GENERAL PROCEDURES FOR SUBMITTALS

A. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

1.08 RECORD DRAWINGS

A. The Record Drawings shall consist of annotated (in ink) Contract Drawings and the approved Shop Drawings and shall be submitted to the Engineer at any time upon request during construction. The Record Drawings shall also be prepared in reproducible form and shall be submitted to the Engineer upon completion of the construction. The Contractor will be furnished AutoCAD CD's of the Contract Drawings in the latest version for preparation of the Record Drawings.

B. Contract Drawings shall be legibly marked to record actual construction including:

1. All deviations in location or elevation of any underground installation from that shown on the Contract Drawings.
2. Any significant changes in above ground installations from approved Shop Drawings or Contract Drawings.

3. No such deviations from the Contract Drawings or approved Shop Drawings shall be made without approval by the Engineer.
  4. Actual location and depth of all installed below grade conduit and piping not specifically shown on the Contract Drawings.
- C. Specifications and addenda shall be legibly marked up to record:
1. Manufacturer, trade name, catalog number, and Supplier of each product and item of equipment actually installed.
  2. Changes made by Change Order or Field Order.
  3. Other matters not originally specified.
- D. Shop Drawings shall be legibly annotated to record changes made after review.

1.09 MANUFACTURER'S CERTIFICATES, INSTRUCTIONS AND WARRANTIES

- A. When specified in individual Sections, Contractor shall submit manufacturer's instructions for delivery, storage, assembly, installation, start-up, adjusting, balancing, and finishing in quantities specified in Product Data. Contractor shall identify any conflicts between the manufacturer's instructions and the Contract Documents.
- B. When specified in individual Sections, Contractor shall submit manufacturer's certificates for review. Certificates shall indicate that the product meets or exceeds the specified requirements.
- C. Certifications shall include appropriate supporting data and may be from recent or previous test results but must be acceptable to the Engineer.
- D. Contractor shall submit required warranty information with the submittals.

1.10 PROFESSIONAL ENGINEER (P.E.) CERTIFICATION FORM

- A. If specifically required in other Sections of these Specifications, the Contractor shall submit a P.E. Certification for each item required, in the form attached to this Section, completely filled in and stamped.

**SECTION 2 SECTION 2 – PRODUCTS  
(NOT USED)**

**SECTION 3 SECTION 3 – EXECUTION  
(NOT USED)**

**END OF SECTION**

**P.E. CERTIFICATION FORM**

The undersigned hereby certifies that he/she is a Professional Engineer registered in the State of North Dakota and that he/she has been employed by (Name of Contractor) to design the following in accordance with Specification Section (Specification Number) for the Fessenden Wastewater Lagoon Improvements.

The undersigned further certifies that he/she has performed the design of the \_\_\_\_\_, that said design is in conformance with all applicable local, state and federal codes, rules, and regulations, and that his/her signature and P.E. stamp have been affixed to all calculations and drawings used in, and resulting from, the design.

The undersigned hereby agrees to make all original design drawings and calculations available to the Engineer or Owner's representative within seven days following written request therefore by the Owner.

Area below designated for P.E. stamp:

P.E. Name \_\_\_\_\_

Signature \_\_\_\_\_

Address \_\_\_\_\_

Contractor's Name \_\_\_\_\_

Signature \_\_\_\_\_

Title \_\_\_\_\_

Address \_\_\_\_\_

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**SECTION 1 - GENERAL****1.01 REQUIREMENTS INCLUDED**

- A. Submit to the Engineer a Schedule of Values allocated to the various portions of the work, within twenty-one (21) calendar days after the effective date of the Agreement.
- B. Upon request of the Engineer, support the values with data which will substantiate their correctness.
- C. The accepted Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

**1.02 RELATED REQUIREMENTS**

- A. Standard General Conditions of the Construction Contract are included in Section 00700.
- B. Application for Payment is included in Section 01027.

**1.03 FORM AND CONTENT OF SCHEDULE OF VALUES**

- A. Type schedule on an 8-1/2-in by 11-in or 8-1/2-in by 14-in white paper furnished by the Owner; Contractor's standard forms and automated printout will be considered for approval by the Engineer upon Contractor's request. Identify schedule with:
  - 1. Title of Project and location.
  - 2. Engineer and Project number.
  - 3. Name and Address of Contractor.
  - 4. Contract designation.
  - 5. Date of submission.
- B. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Identify each line item with the number and title of the respective Section.
- D. For each major line item list sub-values of major products or operations under the item.
- E. For the various portions of the work:
  - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:
    - a. The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials upon request by the Engineer.
    - b. The total installed value.
- F. The sum of all values listed in the schedule shall equal the total Contract Sum.

**1.04 SUBSCHEDULE OF UNIT MATERIAL VALUES**

- A. Submit a sub-schedule of unit costs and quantities for:
  - 1. Products on which progress payments will be requested for stored products.
- B. The form of submittal shall parallel that of the Schedule of Values, with each item identified the same as the line item in the Schedule of Values.
- C. The unit quantity for bulk materials shall include an allowance for normal waste.
- D. The unit values for the materials shall be broken down into:
  - 1. Cost of the material, delivered and unloaded at the site, with taxes paid.
  - 2. Copies of invoices for component material shall be included with the payment request in which the material first appears.
  - 3. Paid invoices shall be provided with the second payment request in which the material appears or no payment shall be allowed and/or may be deleted from the request.



- E. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

**SECTION 2 – PRODUCTS (NOT USED)**

**SECTION 3 – EXECUTION (NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Quality Control and Quality Assurance of installation.
- B. References and Standards
- C. Inspection and Testing Laboratory Services
- D. Manufacturer’s Field Services and Reports

**1.02 RELATED SPECIFICATIONS**

- A. Section 01300 – Submittals
- B. Section 01600 – Material and Equipment

**1.03 QUALITY CONTROL AND QUALITY ASSURANCE OF INSTALLATION**

- A. Contractor shall monitor the quality control of his subcontractors, suppliers, manufacturers, products, services, site conditions, and workmanship to ensure the Work complies with the specified quality.
- B. Contractor shall comply with all manufacturers’ instructions, including sequencing.
- C. Prior to proceeding, Contractor shall request clarification if conflicts are found between the Contract Documents and the manufacturer’s recommendations/instructions.
- D. Contractor shall comply with specified standards as a minimum quality for the Work. When more stringent requirements are dictated by codes, laws, regulations, or manufacturer’s requirements, Contractor shall adhere to the higher standard for Workmanship.
- E. Contractor shall ensure that all Work is performed by personnel qualified and trained to produce Workmanship of the specified quality.
- F. Contractor shall secure all components of the Work in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

**1.04 REFERENCES AND STANDARDS**

- A. Contractor shall conform to all reference standards as of the date of issuance of the Contract Documents.
- B. Contractor shall obtain copies of all standards when required to conform to the Contract Documents.
- C. Prior to proceeding, Contractor shall obtain clarification from Engineer when specified standards are in conflict with the Contract Documents.
- D. No reference documents shall alter the contractual relationship of the parties to the Contract.

**1.05 INSPECTION AND TESTING LABORATORY SERVICES**

- A. The Contractor shall appoint and employ the services of an independent testing firm to perform inspection and testing.
- B. The independent testing firm will perform inspection, testing, and other service specified in individual specification section and as required by the Engineer.

- C. The independent testing firm will submit reports to the Engineer indicating observations and results of tests. Such reports will indicate compliance or non-compliance with the Contract Documents.
- D. Contractor shall cooperate with the independent testing firm and furnish samples of material, equipment, tools, storage, and assistance as required. This shall include, but not be limited to the following:
  - a. Notify Engineer at least twenty-four (24) hours prior to the expected time for operations requiring the services of the independent testing firm.
  - b. Make arrangements with the independent testing firm and pay for additional samples and tests required for the Contractor's use.
- E. Any retests required due to failure or non-conformance with the specifications shall be performed by the same independent testing firm. Payment for retesting will be the responsibility of the Contractor.

1.06 MANUFACTURER'S FIELD SERVICES AND REPORTS

- A. Contractor shall submit to the Engineer the qualifications of any manufacturer's field representatives a minimum of 30 days prior to that representative providing field services. Representative shall be subject to the approval of the Engineer.
- B. Contractor shall require all suppliers and manufacturers to provide qualified personnel to observe site conditions, conditions of the installation, quality of workmanship, start-up of equipment (including testing, balancing, and adjusting), and to provide instruction of Owner's Personnel.
- C. No decisions or instructions given to applicators or installers shall be outside of the manufacturer's written instructions.
- D. Manufacturers shall prepare a report of any site observations and provide this report to Engineer within thirty (30) days of observation.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SUMMARY****A. Section Includes:**

1. Selection and Payment
2. Quality Assurance
3. Contractor Submittals
4. Laboratory Responsibilities
5. Laboratory Reports
6. Limits on Testing Laboratory Authority
7. Contractor Responsibilities
8. Schedule of Inspections and Tests
9. Retesting

**B. Related Sections:**

1. Document 00840 – Geotechnical Reports: information Available to Bidders
2. Section 01300 – Submittals
3. Section 01400 – Quality Control
4. Section 01700 – Contract Closeout: Project Record Documents

**C. Individual Specifications Sections:**

1. Inspections and test required, and standards for testing.

**1.02 REFERENCES**

- A. ANSI/ASTM D3740 – Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
- B. ANSI/ATM E329 – Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction

**1.03 SELECTION AND PAYMENT****A. Contractor shall employ and pay for services of one of the following independent testing laboratories to perform specified inspection and testing:**

1. Braun Intertech,
2. Terracon,
3. Other proposed testing services will be considered as provided in Section 01630

**B. Employment of testing laboratory shall in no way relieve Contractor of Obligation to perform work in accordance with requirements of contract documents.****1.04 QUALITY ASSURANCE**

- A. Comply with requirements of ANSI/ASTM E329 and ANSI/ASTM D3740.
- B. Laboratory: Authorized to operate in which the project is located.
- C. Laboratory Staff: Maintain a full time registered Engineer specialist on staff to review services.
- D. Testing Equipment:

1. Calibrated to reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards (NBS) Standard or accepted values of natural physical constants.

#### 1.05 CONTRACTOR SUBMITTALS

- A. Prior to start of work, submit testing laboratory name, address, and telephone number, and names of full time registered engineer specialist and responsible officer.
- B. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards (NBS) during most recent tour of inspection, with memorandum of remedies of any deficiencies reported by the inspection.
- C. Submit a summary report of all testing upon completion of the project.

#### 1.06 LABORATORY RESPONSIBILITIES

- A. Test samples of materials submitted by contractor.
- B. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
- C. Perform specified inspection, sampling, and testing of products in accordance with specified standards.
- D. Ascertain compliance of materials and mixes with requirements of contract documents.
- E. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of work or products.
- F. Perform additional inspections and test required by Engineer.
- G. Attend preconstruction conferences and progress meetings.

#### 1.07 LABORATORY REPORTS

- A. After each inspection and test, promptly submit two (2) copies of laboratory report to Engineer, and to Contractor.
- B. Include:
  1. Date issued
  2. Project title and number
  3. Name of inspector
  4. Date and time of sampling or inspection
  5. Identification of product and specifications section
  6. Location in the project
  7. Type of inspection or test
  8. Date of test
  9. Results of test
  10. Conformance with contract documents
- C. When required by the Engineer, provide interpretation of results.

#### 1.08 LIMITS ON TESTING LABORATORY AUTHORITY

- A. Laboratory may not release, revoke, alter, or enlarge on requirements of contract documents.
- B. Laboratory may not approve or accept any portion of the work.
- C. Laboratory may not assume any duties of contractor.
- D. Laboratory has no authority to stop the work.

1.09 CONTRACTOR RESPONSIBILITIES

- A. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
- B. Cooperate with laboratory personnel, and provide access to the work and to manufacturer's facilities.
- C. Provide incidental labor and facilities to provide access to work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, storage and curing of test samples.
- D. Notify Engineer and laboratory 24 hours prior to expected time for operations requiring inspection and testing services.
- E. Pay costs of testing laboratory services.

1.10 RETESTING

- A. Where results of quality control services prove unsatisfactory and do not indicate compliance of related work with requirements of the contract documents, retests are responsibility of Contractor, regardless of whether the original test was Contractor's responsibility. Retesting will be at the rate of 2 retests for each failed test. Retest of work revised or replaced by the Contractor is Contractor's responsibility. Retesting costs invoiced by the Owner will be deducted from contract amount by Supplemental Agreement.

**SECTION 2 – PRODUCTS (Not Used)**

**SECTION 3 – EXECUTION (Not Used)**

**END OF SECTION**

**SECTION 1 – GENERAL**

1.01 SPECIFICATION INCLUDES

- A. Temporary Utilities, including electricity, telephone, water, and sanitary facilities.
- B. Temporary Controls, including barriers, enclosure, fencing, security, protection of the Work, and water and dust control.
- C. Temporary Construction Facilities, including access roads, parking, site cleaning, project signage, Engineer’s field office, and temporary buildings.

1.02 RELATED SPECIFICATIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – Sequence and Constraints of Construction
- C. Section 01700 – Contract Closeout
- D. Section 01710 – Cleaning

1.03 TEMPORARY ELECTRICITY

- A. Contractor shall provide for and pay for any temporary power service from the Utility source.
- B. The Contractor shall pay for the cost of energy used until substantial completion. Contractor shall exercise measures to conserve energy.

1.04 TEMPORARY TELEPHONE SERVICE

- A. Contractor shall provide, maintain, and pay for telephone service to his field office throughout the project, if so desired by the Contractor.

1.05 TEMPORARY WATER SERVICE

- A. Contractor shall provide, maintain, and pay for suitable quality water service required for construction. This includes providing customers with water service who may be cut off from service due to construction activities.
- B. The Contractor shall pay for the cost of water used and shall supply an accurate meter to record the quantity of water used.
- C. Contractor shall extend branch piping with outlets located so that water is available with hoses using threaded connections.

1.06 TEMPORARY SANITARY FACILITIES

- A. Contractor to provide, maintain, and pay for temporary sanitary facilities and enclosures.

1.07 ENGINEER’S FIELD OFFICE

- A. Contractor must provide separate space for sole use of Owner and Engineer with separate entrance door with new lock and two (2) keys.
- B. Area
  - 1. Minimum of 150 square feet

2. Minimum dimension of 8 feet
- C. Temperature Controls
  1. Provide air conditioning unit and heater to control temperature of space between 68 and 72 degrees F at all times of the year.
- D. Windows
  1. Minimum of two (2), minimum area of 8 percent of floor area, with operable sash and insect screens.
  2. Locate to provide view of construction area.
- E. Electrical Distribution Panel and Outlets
  1. Two (2) circuits minimum, 110V/60Hz service
  2. Minimum of four (4) 110V duplex convenience outlets, one per wall.
- F. Sanitary Facilities and Potable Water
  1. Convenient access to toilet facilities.
  2. Furnish bottled water container and dispenser, with cooler. Supply refills as required.
- G. Furnishings
  1. One desk (54" x 30") with three drawers, minimum
  2. One drafting table (36" x 72")
  3. Plan rack to hold construction drawings, shop drawings, and record drawings
  4. One (1) swivel arm chair
  5. One (1) refrigerator with at least 3.9 cubic feet of volume
  6. Two (2) straight arm chairs
  7. Two (2) waste baskets
  8. One (1) color inkjet printer, compatible with PC laptop, with all necessary cables and power supplies (Engineer will supply paper and ink refills)
- H. Cleaning
  1. Contractor shall be responsible for keeping Engineer's office clean and disposing of trash.

#### 1.08 BARRIERS

- A. Contractor shall provide barriers to provide for the following:
  1. Prevention of unauthorized access to the construction site.
  2. Allow for Owner's use of the site.
  3. Protection of existing facilities.
  4. Protection of adjacent properties.
- B. Provide barricades and temporary controls required by the governing authority for public rights-of-way.
- C. Provide protection for plant life designated to remain. Replace any plant life damaged by construction activities.
- D. Provide protection for vehicular traffic, stored materials, site, and structures.

#### 1.09 FENCING

- A. Contractor shall install site fencing at their option with the approval of Engineer.
- B. Any temporary fencing to control access to the site to prevent vandalism or theft is the responsibility of the Contractor. Any repair or replacement required due to vandalism or theft at the site is the responsibility of the Contractor.



#### 1.10 WATER CONTROL

- A. Contractor shall provide, operate, and maintain pumping equipment to maintain all excavations free from water.
- B. Contractor shall grade the site to drain and protect the site from puddles or running water.
- C. Contractor shall provide water barriers as required to protect the site from soil erosion.
- D. Contractor shall comply with all National Pollution Discharge Elimination System (NPDES) Permit requirements. NPDES requirements can be found on the plans and in the specifications.

#### 1.11 PROTECTION OF INSTALLED WORK

- A. Contractor shall provide for the protection of completed Work and installed products. Work of products damages shall be repaired or replaced at the Contractor's expense.

#### 1.12 SITE SECURITY

- A. Contractor shall provide security at the site to prevent unauthorized access, vandalism, and theft of items of the Work or Owner's property.
- B. Contractor is responsible for all site security. Any repair or replacement required due to vandalism or theft at the site is the responsibility of the Contractor.

#### 1.13 ACCESS ROADS

- A. Contractor shall construct and maintain any temporary roads to serve the construction site. Maintain acceptable access for all residences and businesses at all times. Temporary roads shall be extended, relocated, and removed as necessary to accommodate the Work.
- B. Contractor shall provide detours, including signage and signaling, as needed for uninterrupted traffic flow.
- C. Contractor shall provide wash areas to remove dirt, mud, and other debris from vehicle prior to entering roadways.
- D. Contractor shall provide and maintain access to all manholes and fire hydrants.

#### 1.14 CLEANING OF WORK

- A. Maintain the site in a clean, neat, and orderly condition. All waste and debris shall be removed periodically and disposed of off-site no less often than weekly.

#### 1.15 REMOVAL OF TEMPORARY FACILITIES AND CONTROLS

- A. Contractor shall remove all temporary utilities, equipment, facilities, and materials prior to substantial completion. Areas used for temporary facilities shall be cleaned and any damage repaired.

### **SECTION 2 – PRODUCTS**

**(NOT USED)**

### **SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

**SECTION 1 – GENERAL**

1.01 SPECIFICATIONS INCLUDES

- A. Control of pedestrian and vehicular traffic during the Work.

1.02 REFERENCE STANDARDS

- A. Manual of Uniform Traffic Control Devices (MUTCD), latest edition.

**SECTION 2 – PRODUCTS**

2.01 MATERIALS AND DEVICES

- A. All materials and devices shall be as shown on the Drawings and shall conform to the latest edition of MUTCD.

**SECTION 3 – EXECUTION**

3.01 PREPARATION

- A. Contractor shall notify Owner a minimum of 48 hours prior to closing and street, sidewalk, or path.

3.02 INSTALLATION AND MAINTENANCE

- A. Contractor shall coordinate all closures and detours with the Engineer and Owner.
- B. All materials and devices shall be placed in accordance with the Drawings and installed to resist overturning or other objectionable movement.
- C. Contractor shall inspect and maintain the devices daily. All unacceptable materials and devices found on the site shall be replaced immediately within 4 hours of notification. Devices shall be cleaned regularly and maintained free of dirt, mud, or other foreign material which reduces the efficacy of the devices.
- D. Contractor shall remove all traffic control devices when no longer required.

**END OF SECTION**

**SECTION 1 – GENERAL**

## 1.01 SPECIFICATIONS INCLUDES

- A. Informational Signs

## 1.02 RELATED SECTIONS

- A. 01500 – Construction Facilities and Temporary Controls

## 1.03 INFORMATIONAL SIGNS

- A. Contractor shall provide, install, and maintain job instruction signs, such as 'DANGER', KEEP OUT', 'NO PARKING', etc that may be required to safely conduct the Work.
- B. Size, location, and colors of signs shall be as required by regulatory agencies, or as appropriate for usage.
- C. Advertising signs of any type shall not be permitted on the site.
- D. Any other signs may be allowed with the approval of the Engineer and Owner.

**SECTION 2 – PRODUCTS**

## 2.01 MATERIALS

- A. Structural and framing materials shall be new wood or metal in sound condition and shall be structurally adequate and suitable for the specified use and finish.
- B. Sign surfaces shall be ¾ inch exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.
- C. All hardware shall be galvanized.
- D. The entire woodwork of the sign shall be given a priming coat suitable for surface and finish coats. The sign, including framework, shall be given two coats of white exterior paint.
- E. Sign lettering shall be as shown on the Drawings and shall include logos.

**SECTION 3 – EXECUTION**

## 3.01 PREPARATION

- A. Contractor shall paint the exposed surfaces of supports, framing, and surface materials.
- B. Sizes, styles, and colors of graphics shall be as selected by the Engineer and Owner.

## 3.02 INSTALLATION AND MAINTENANCE

- A. Contractor shall maintain all signs in a neat and clean condition. Repair and damages to signs immediately.
- B. All signs, framing, supports, and foundations shall be removed and disposed of at the completion of the Work.

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Product Options and Substitutions

**1.02 RELATED SPECIFICATIONS**

- A. Section 00100 – Instructions to Bidders
- B. Section 00700 – General Conditions
- C. Section 01400 – Quality Controls
- D. Section 01630 – Product Options and Substitutions

**1.03 PRODUCTS**

- A. All products used in the Work shall be new material. This shall not include the equipment or machinery used for preparation, fabrication, conveyance, or erection of the Work. This shall also not include existing materials or components required for reuse.
- B. Similar components shall be of the same manufacturer and shall be interchangeable.

**1.04 STORAGE AND PROTECTION**

- A. Contractor shall store and protect all products and materials as instructed by the manufacturer. As required, store products and materials in weather-tight and climate controlled areas or enclosures. Protect against dust and debris.
- B. Products stored outside shall be supported and shall be placed above ground with positive drainage away from them.
- C. Contractor shall provide off-site storage when on-site storage is not possible or will not provide adequate protection.
- D. Products shall be covered with an impervious covering with ventilation provided to avoid condensation.
- E. Granular materials shall be stored on a solid, flat surface with positive drainage away from it. Contractor shall take measures to prevent mixing with foreign materials.
- F. Contractor shall take measures that will allow for periodic inspection of all stored items to ensure products are undamaged and storage facilities and methods are adequate.

**1.05 PRODUCT OPTIONS AND SUBSTITUTIONS**

- A. Contractor shall submit all requests for product options and substitutions in accordance with the procedures outlined in Section 01630.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. The Furnishing and Installation of Product specified, under options and conditions for substitutions outlined in this Section.
- B. Whenever a product, material or item of equipment is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, followed by the phrase “or equal,” the specific item mentioned shall be the basis upon which bids are to be prepared, and shall be understood as establishing the type, function, dimension, appearance and quality desired.
- C. Other manufacturer's or vendor's products not named will be considered as substitutions, provided the required information is submitted in the manner set forth in this section and provided the substitution will not require substantial revisions to the Contract Documents.

**1.02 RELATED SPECIFICATIONS**

- A. Section 00100 – Instructions to Bidders
- B. Section 00300 – Bid Form
- C. Section 00400 – Bidder’s List of Major Equipment Suppliers
- D. Section 01600 – Material and Equipment

**1.03 CONTRACTOR’S OPTIONS**

- A. For Products specified only by reference standard, Contractor may select any product meeting that standard, by any manufacturer.
- B. For Products specified by naming several products or manufacturers, select any one of the products and manufacturers named which complies with the Specifications.
- C. For Products specified by naming one or more products or manufacturers and stating ‘or equal’, Contractor shall submit a request as for substitutions, for any product or manufacturer which is not specifically named. Requests for Substitutions will not be accepted prior to Notice of Award being issued.

**1.04 SUBSTITUTIONS**

- A. In order for substitutions to be considered, the Contractor shall submit, within thirty (30) days of issuance of the Notice of Award, complete data as set forth herein to permit a complete analysis of all proposed substitutions noted on his substitution list. No substitutions shall be considered unless the Contractor provides the required data in accordance with the requirements of the Section within the thirty (30) day period.
- B. Contractor shall submit separate requests for each substitution. Each request shall be supported with a minimum of the following items, although individual specification sections may require additional information not included in this list:
  - 1. Complete data substantiating compliance of proposed substitution with requirements stated in the Contract Documents, including:
    - a. Product Identification, including manufacturer’s name and address.
    - b. Manufacturer’s Literature, including, but not limited to the following:

- 1) Product Description
  - 2) Reference Standards
  - 3) Performance and Test Data
  - 4) Operation and Maintenance Data
  - 5) Product Drawings
  - 6) Product Specifications
  - 7) Documentation of NSF Standards, as applicable
- c. Samples, if applicable.
  - d. A list of 10 installations of similar type and size with address, telephone numbers, and dates of installation. The Engineer and Owner may contact these installations sites to determine experience.
2. Itemized comparison of the proposed substitution with product specified; list significant variations. Substitution shall not change design intent and shall perform equal to that specified.
  3. Data relating to impact on construction schedule occasioned by the proposed substitution.
  4. Effect of substitution on separate contracts, if any.
  5. List of changes required in other work or products. Contractor shall pay for all changes, including any engineering re-design work and/or revisions to drawings.
  6. Accurate cost data comparing the proposed substitution with product specified. The Owner shall benefit from any decrease in costs as a result of using the substitution.
  7. Designation of required license fees or royalties.
  8. Designation of availability of maintenance services and sources of replacement materials.
- C. Substitutions will not be considered for acceptance when:
1. They are indicated or implied on shop drawings or product data submittals without a formal request from the Contractor.
  2. They are requested directly by a subcontractor or supplier.
  3. Acceptance will require substantial revision of the Contract Documents.
- D. Requests for substitutions submitted after Notice of Award will not be considered unless evidence is submitted to the Engineer that all of the following circumstances exist:
1. The specified product is unavailable for reasons beyond the controls of the Contractor. Such reasons shall consist of strikes, bankruptcy, discontinuance of manufacture, or acts of God.
  2. The Contractor placed, or attempted to place, orders for the specified products within 10 days after Notice of Award.
  3. Request for substitution is made in writing to the Engineer within 10 days of the date on which the Contractor ascertains that he cannot obtain the item specified.
  4. Complete data, as set forth herein to permit a complete analysis of the proposed substitution, is submitted with the request.
- E. The Engineer's decision regarding evaluation of substitutions shall be considered final and binding. Requests for time extensions and additional costs based on submission of, acceptance of, or rejection of substitutions will not be allowed. All approved substitutions will be incorporated into the Agreement by Change Order.



1.05 CONTRACTOR'S REPRESENTATION

- A. In making formal requests for substitutions, the Contractor represents that:
1. He has investigated the proposed products and has determined that they are equal to or superior in all respects to the specified product.
  2. He will provide, at a minimum, the same warranties or bonds for the substitutions as for the specified products.
  3. He will coordinate the installation of the substitutions into the Work, and he will make such changes as may be required for the Work to be complete in all respects.
  4. He waives any and all claims for additional costs caused by the substitutions, which may subsequently become apparent.
  5. Cost data is complete and includes related costs under his contract, but not:
    - a. Costs under separate contracts.
    - b. Engineer's costs for redesign or revision of Contract Documents.
  6. If, after installation, the substitution equipment does not perform in accordance with the specifications or other deficiencies are noted, the Contractor shall make modifications or replacement of such equipment to meet the specifications at no additional expense to the Owner.

1.06 ENGINEER'S RESPONSIBILITIES

- A. Engineer shall review the Contractor's requests for substitutions with reasonable promptness.
- B. Engineer shall notify the Contractor, in writing, of the decision to accept or reject the requested substitution.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Contract Closeout Procedures
- B. Final Cleaning
- C. Record Documents
- D. Guarantees and Warranties
- E. Spare Parts and Maintenance Materials

**1.02 RELATED SPECIFICATIONS**

- A. Section 01027 – Applications for Payment
- B. Section 01500 – Construction Facilities and Temporary Controls
- C. Section 01710 - Cleaning
- D. Section 01730 – Operation and Maintenance Information

**1.03 CONTRACT CLOSEOUT PROCEDURES**

- A. Contractor shall submit a written certification indicating that the Contract Documents have been reviewed, the Work has been inspected, and that all Work has been completed in accordance with the Contract Documents. Certification shall indicate that the work is ready for inspection by the Engineer.
- B. Contractor shall certify that all submittals have been delivered to the Engineer.
- C. Contractor shall submit a final Application for Payment in accordance with Section 01027. Application shall identify the total adjusted Contract Sum, all previous payments, and the remaining sum due.

**1.04 FINAL CLEANING**

- A. Prior to final inspection, Contractor shall execute a final cleaning of the Work and premises.
- B. Contractor shall remove all waste materials and temporary facilities from the site.

**1.05 RECORD DOCUMENTS**

- A. Contractor shall maintain, on site, a set of each of the following documents and shall record revisions to the Work:
  - 1. Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Change Orders
  - 5. Reviewed Shop Drawings, product data, and product samples.
- B. Contractor shall keep Record Documents separate from Construction Documents.
- C. Contractor shall record all information as construction progresses.
- D. Contractor shall make annotations in each Specification for each Product installed. This shall include, at a minimum, the following:
  - 1. Changes or modifications made by Addendum.
  - 2. Substitutions or Product Options.

3. Manufacturer's name, product model and number.
- E. Contractor shall legibly mark all drawings and shop drawings to record actual construction including, but not limited, to the following:
  1. Locations, including both horizontal and vertical measurements, of underground utilities and appurtenances. Locations shall be referenced to permanent surface structures.
  2. Locations of internal utilities and appurtenances concealed within the construction. Locations shall be referenced to visible and accessible items of the Work.
  3. Any field changes, including dimensions and details.
  4. Any dimensions or details not included on the Contract Documents.
- F. Engineer's seal shall be deleted from all Record Documents.
- G. All Record Documents shall be submitted to the Engineer along with any final Application for Payment.

#### 1.06 GUARANTEES AND WARRANTIES

- A. Contractor shall provide a minimum of two (2) notarized copies of all Guarantees and Warranties.
- B. Any Guarantees or Warranties from Subcontractor, Suppliers, or Manufacturers shall be assembled by the Contractor and provided to the Engineer and Owner.
- C. All Guarantees and Warranties shall be provided with a Table of Contents within a durable, plastic, three-ring binder.
- D. All Guarantees and Warranties shall be submitted prior to making final Application for Payment.

#### 1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Contractor shall provide spare parts and all maintenance materials as specified in individual Sections of the Specifications.
- B. All spare parts and maintenance materials shall be delivered to a place and location as directed by the Engineer.
- C. Engineer and Owner shall conduct an inspection of the spare parts and materials. Contractor shall provide a receipt of all materials delivered.
- D. All spare parts and materials shall be delivered and accepted prior to final Application for Payment.

### **SECTION 2 – PRODUCTS**

**(NOT USED)**

### **SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Requirements for project cleaning during the progress of the Work and at completion of the Work.

**1.02 RELATED SPECIFICATIONS**

- A. Section 00700 – General Conditions
- B. Refer to each individual Section for specific requirement for certain products of portions of the Work.

**1.03 REQUIREMENTS**

- A. All cleaning operations and disposal of spent products and materials shall comply with all codes, ordinances, regulations, and any anti-pollution laws.

**SECTION 2 – PRODUCTS****2.01 MATERIALS**

- A. All cleaning materials and products shall not create hazards to health or property and shall not damage surfaces.
- B. Surfaces to be cleaned shall be done so in accordance with the requirements of the manufacturer with cleaning products as recommended by the manufacturer.

**SECTION 3 – EXECUTION****3.01 PROGRESS CLEANING**

- A. Contractor shall clean the Work daily and keep the site and adjacent properties free from the accumulation of waste materials, rubbish, and windblown debris that result from construction activities.
- B. Contractor shall provide an on-site container for the collection and disposal of waste, rubbish, and debris.
- C. Contractor shall remove all waste periodically from the site and dispose of at a legal disposal or landfill away from the site.
- D. Contractor shall be responsible for the general maintenance of the Work areas and shall coordinate the cleanup of all trades on a daily basis.
- E. Premises that are not maintained properly may be cleaned by the Owner and the costs charges to the Contractor.
- F. The Work shall be thoroughly cleaned prior to the application of any coatings, paint, or other finishes.
- G. Cleaning of the Work shall apply to all portions of the Work.
- H. Contractor shall keep roadways free of dust, dirt, mud, and any other debris.

**3.02 DUST CONTROL**

- A. Work shall be maintained dust free prior to the application of any coatings, paint, or other finishes.
- B. Contractor shall schedule the cleaning operations so as to not affect newly-coated surfaces.
- C. Contractor shall minimize exterior dust caused by construction operations.

3.03 FINAL CLEANING

- A. Final cleaning shall be completed by skilled workman with experience using the products and materials needed to execute the final cleaning.
- B. All foreign materials shall be removed from all interior and exterior surfaces.
- C. Prior to final Owner occupancy, Engineer shall inspect the Work and verify that the entire work is clean. Any areas not entirely clean shall be cleaned until acceptable to the Owner and Engineer.

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Format and Contents of Operation and Maintenance Manuals
- B. Schedule of Submittals

**1.02 RELATED SPECIFICATIONS**

- A. Section 01300 – Submittals
- B. Section 01400 – Quality Control
- C. Section 01600 – Material and Equipment
- D. Section 01700 – Contract Closeout
- E. Refer to individual Specification Section for additional requirements.

**1.03 QUALITY CONTROL/ASSURANCE**

- A. Operations and Maintenance information shall be prepared by personnel with experience in the design and operation of the individual products.

**1.04 FORMAT**

- A. Operational and Maintenance information shall be prepared as an instructional manual.
- B. Information shall be contained in commercial quality, 8 ½" x 11", three-ring binders with hardback, cleanable, plastic cover. Maximum ring size shall be one inch. If multiple binders are required for a specific product, information shall be grouped in logical sections and labeled.
- C. The cover of each binder shall identify the title of project and the subject matter of its contents. Each title shall be typed and bear the general title 'OPERATION AND MAINTENANCE INSTRUCTIONS'.
- D. Contents shall be labeled by specification section, section number, and in the sequence of the Table of Contents of the Contract Documents.
- E. Provide a tabbed flyleaf for each product and system, with a typed description of the product and each major component.
- F. Paper used shall be a minimum of 24 pound paper.
- G. Drawings shall be provided with reinforced punched binder tabs. All drawings shall be included with the text and folded to the size of the text pages.

**1.05 CONTENTS**

- A. Provide a Table of Contents that includes the following:
  - 1. Title of Project
  - 2. Name, addresses, telephone numbers of Engineer, Subconsultants, and Contractor with name of responsible parties.
  - 3. Schedule of Products and Systems.
  - 4. Volume Contents.
- B. List names, addresses, and telephone numbers of subcontractors or suppliers for each product or system. Include a local source of supplies and replacement parts.

- C. Each sheet shall be marked to clearly identify specific products and component parts, including data applicable to the installation. All information not applicable to the installation shall be deleted or lined out.
- D. Product data shall be supplemented with drawings or illustrations or components to show control and flow diagrams. Project Record Drawings shall not be used as operation and maintenance drawings.
- E. Copies of all warranties and bond shall be bound in each copy of each manual.

#### 1.06 EQUIPMENT AND SYSTEMS MANUALS

- A. Each manual for equipment and systems shall include a description of the unit or system and all component parts. The manual shall identify the function, normal operation, and limiting conditions. Include performance curves, engineering data and tests, complete system nomenclature, and commercial numbers of the replacement parts.
- B. Provide panelboard circuit directories that include electrical service characteristics, controls, and communications.
- C. Include as-built, color-coded wiring diagrams.
- D. Include operations procedures consisting of the following, at a minimum:
  - 1. Start-up procedures.
  - 2. Break-in procedures
  - 3. Normal Operation instruction and any sequencing instructions
  - 4. Regulation, control, stopping, and shut-down procedures.
  - 5. Emergency Instructions.
  - 6. Instructions for seasonal operation.
- E. Include maintenance information consisting of the following, at a minimum:
  - 1. Routine maintenance.
  - 2. Troubleshooting information.
  - 3. Instructions on disassembly, repair, and reassembly.
  - 4. Alignment, adjusting, checking, and balancing.
- F. Provide a schedule for servicing and lubrication, including a list of required products and tools.
- G. Include manufacturer's standard operations and maintenance instructions.
- H. Include the controls sequence of operation and controls diagrams.
- I. Include manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Include coordination drawings from the Contractor showing color-coded piping diagrams as installed.
- K. Provide valve tag number in a chart that is correlated to the flow and control diagrams.
- L. Provide a list of standard spare parts, current prices and recommended inventory to be maintained of each.
- M. Include any testing and balancing reports.
- N. Include any additional information called for in individual specification sections.

#### 1.07 SUBMITTALS

- A. Contractor shall submit three (3) hard copies of preliminary draft manuals. Engineering shall review the draft and return one copy to the Contractor with comments.

- B. Submit one (1) hard copy of the completed manual in final form a minimum of 15 days prior to startup of the equipment, component, or system. Engineer will return copy after startup with comments. Manuals shall be revised based on these comments.
- C. Contractor shall provide copies of applicable sections of preliminary manuals necessary to complete start up and operator training.
- D. Contractor shall submit four (4) hard copies of each manual in final form within 14 days of receiving Engineer's comments after startup.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

**(NOT USED)**

**END OF SECTION**



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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Complete demolition of all existing structures which are encountered in the way of new Work as shown on the Drawings.
- B. Modifications of structures, equipment, appurtenances and utilities as necessary to allow for operation of facilities during construction.
- C. Removal of existing piping and other equipment as shown on the Drawings.
- D. Removal or plugging of existing piping as shown on the Drawings.
- E. Demolition, partial removal, and cutting as required for new construction.
- F. Distribution of salvageable and excess materials as specified.
- G. Disposal of excess and unacceptable materials.

**1.02 RELATED SPECIFICATIONS**

- A. Section 02100 – Clearing and Grubbing
- B. Section 02220 – Trenching, Backfilling, and Compacting

**1.03 SUBMITTALS/SHOP DRAWINGS**

- A. Provide sequence of demolition and removal of Work to ensure daily operations are not interrupted.

**1.04 DISPOSAL OF MATERIALS**

- A. All demolished materials and equipment, except where noted, shall become the property of the Contractor and must be removed from the site and properly disposed of.
- B. Contractor shall use identified haul routes.

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION****3.01 EXAMINATION AND PREPARATION**

- A. Verify existing utilities to remain in service and protect against damage.
- B. Take measures to minimize dust and noise during demolition
- C. Exercise precautions for fire prevention. Burning of demolition debris is not permitted on site.
- D. Exercise precautions to maintain operations.
- E. Exercise precautions to minimize falling debris on adjacent structures, facilities, and persons.
- F. Provide shoring and bracing of adjacent structure and utilities when necessary.
- G. Coordinate with utilities to shut off as necessary.

### 3.02 DEMOLITION

- A. Demolition shall be performed to the limits shown on the Drawings or, if no limits are shown, to a depth at least 2 feet below final grade, or 2 feet below any new foundation or pipe.
- B. Wet down work during demolition operations to prevent dust from arising. Provide maximum practicable protection from inclement weather for materials, equipment and personnel located in partially dismantled structures.
- C. Existing below grade slabs to be abandoned but not demolished shall have holes cut to allow for positive drainage to prevent flotation.
- D. Remove all demolished Work as indicated on Drawings and prepare adjoining areas for installation of new Work or for blocking up and filling in of openings.
- E. All demolition debris shall become the property of the Contractor and shall be removed from the site and disposed of properly. Demolition debris shall not be used for fill or backfill.
- F. Blasting or the use of explosives will not be allowed for demolition Work.

### 3.03 BURIED PIPING

- A. Remove all buried piping encountered during excavation unless otherwise shown on the Drawings or directed by the Engineer.
- B. Pipes indicated to be abandoned but not removed shall have open ends plugged with concrete. Engineer will determine location of where pipes shall be plugged.

### 3.04 DAMAGE

- A. Repair damages caused to adjacent structures and facilities to condition equal to that prior to construction

### 3.05 MODIFICATIONS

- A. Modify existing facilities as shown on the Drawings.

**END OF SECTION**

**SECTION 1 – GENERAL**

1.01 SPECIFICATION INCLUDES

- A. Clearing, grubbing, removal, and disposal at the site.
- B. Topsoil stripping and stockpiling.
- C. Removal of demolished debris.

1.02 RELATED SPECIFICATIONS

- A. Section 02050 – Demolition
- B. Section 02220 – Trenching, Backfilling, and Compacting

**SECTION 2 – PRODUCTS**

**(NOT USED)**

**SECTION 3 – EXECUTION**

3.01 EXAMINATION AND PREPARATION

- A. Verify construction lines have been established and objects to remain have been designated.
- B. Obtain a suitable location for disposal of debris and furnish Engineer with a copy of any related agreements.
- C. Obtain a suitable location for staging and stockpiling. Furnish Engineer with a copy of any related agreements.

3.02 PROTECTION

- A. Preserve and protect all objects designated to remain.
- B. Seal cut or scarred trees and shrubs designated to remain with approved tree surgery paint.

3.03 CLEARING AND GRUBBING

- A. Strip all topsoil and stockpile. Respread after completion of Work. Stockpile locations shall be approved by the Owner and Engineer. Additional topsoil may be necessary as called for in subsequent Sections of these Specifications.
- B. Remove trees, shrubs, stumps, roots, brush, and all other objectionable objects.
- C. Dispose of materials and debris. Burning shall not be allowed.
- D. Fill all holes with suitable material and compact as specified.

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Excavation for footings and structures, and preparation of the subgrade for footings, foundations, structures, and other items.
- B. Proper handling, transportation, storage, and disposal of all excavated materials.
- C. Sheeting, shoring, and other protection work.
- D. Subgrade preparation, dewatering and/or pumping of seepage.
- E. Backfill and compaction.
- F. Engineered fill.
- G. Site grading.
- H. Lagoon construction.

**1.02 RELATED SPECIFICATIONS**

- A. Section 01300 – Submittals
- B. Section 01400 – Quality Control
- C. Section 02050 – Demolition
- D. Section 02100 – Clearing and Grubbing
- E. Section 02220 – Trenching, Backfill, and Compacting
- F. Section 02270 – Slope Protection and Erosion Control

**SECTION 2 – PRODUCTS****2.01 MATERIALS**

- A. All materials shall conform to the following specifications, except as indicated otherwise on the Drawings.
  - 1. Engineered Fill: Engineered fill shall be pit-run, free from dirt, clay, and other objectionable materials. It shall conform to the Unified Soil Classification System as Class SP-SM (less than 12% of particles passing the #200 sieve and 100% of particles passing the 2" sieve).
  - 2. Sand and Gravel Fill: Sand and Gravel fill shall be clean, pit-run gravel ranging from 5% fines up to pea rock size, with not more than 5% passing the #200 sieve. It shall also meet the following characteristics:
    - a. 100% passing the ¾" sieve
    - b. Maximum of 35% passing the #40 sieve
    - c. Maximum of 5% passing the #200 sieve
  - 3. Coarse Gravel Fill: Gravel shall be clean and free from dirt, clay, and other objectionable materials. Fill shall range in size for ¼" to ¾" in diameter.
  - 4. Finish Grading: Contractor shall provide 6 inches of black dirt over the site outside of the lagoons. Black dirt shall be free of debris, roots, wood and other objectionable material.

- B. All fill and backfill shall be approved by the Engineer. Submit material reports per section 01300 Submittals.

## 2.02 LAGOON FILL MATERIALS

- A. Materials (see geotechnical report for full information)
  - 1. Berms and below clay liner –
    - i. Soil Type: CH, CL, SM, SC
    - ii. Gradation: 100% passing 2-inch sieve
    - iii. Less than 2% Organic Content
  - 2. Clay Liner – Low permeability soil
    - i. Soil type: CH, CL
    - ii. Gradation: % Passing P200 > 60, LL > 20, PI > 10
- B. Compaction of fill materials shall be done to densities according to Standard Proctor ASTM D698.
  - 1. Lagoon Bottom: 95 Percent.
  - 2. Clay Liner: 95 Percent.
  - 3. Dike Fill: 95 percent.
  - 4. All other areas not specified: 90 Percent.
  - 5. Moisture Content Variance from Optimum: -1 to +3 percentage points
  - 6. At least one (1) test for moisture content and density shall be taken per 500 cubic yards of compacted dike material and one (1) test per acre of compacted lagoon bottom.
  - 7. At least one (1) test for moisture content and density shall be taken per 200 cubic yards of compacted clay liner material for each lift.
  - 8. Permeability testing of core samples from the finished in-place clay liner shall be provided. At least one (1) core per acre should be tested. The permeability of the clay liner should be as low as possible and in no case should seepage through the seal exceed 500 gallons/acre/day.
- C. Placement and compaction of fill materials shall conform to the following requirements.
  - 1. Subgrade compaction must be approved prior to placement of fill materials.
  - 2. Place approved fill materials in layers not to exceed 12" of uncompacted thickness.
  - 3. Do not place fill of frozen substrates.
  - 4. Do not place fill on substrates covered with snow or ice.
  - 5. Thoroughly mix fill and water, as necessary, to obtain a moisture content that will permit proper compaction.
  - 6. Each layer shall be compacted to the specified density. A compaction density of 99 percent shall not be exceeded to avoid soil rebounding.
  - 7. The compaction process shall be repeated with each successive layer until the desired grade is obtained.

## SECTION 3 – EXECUTION

### 3.01 EXAMINATION AND PREPARATION

- A. Contractor shall verify the location of all underground utilities prior to commencing the Work.

- B. Contractor shall establish grades, lines, and levels on the site. Refer to Section 01051 of these Specifications.
- C. Contractor shall provide and maintain any and all necessary protection, shoring, bracing, and support for all above ground and below ground utilities and facilities.

### 3.02 EXCAVATION

- A. Contractor shall excavate to the lines and elevations as shown on the Drawings.
- B. Contractor shall strip the existing topsoil and store for reuse.
- C. Any excavation for footings shall be adequate to allow for construction and removal on formwork.
- D. Contractor shall divert all surface water to keep all excavations dry. Any wet or saturated material shall be removed and disposed of at the Contractor's expense.
- E. Excavations that extend to the static groundwater level or below shall be dewatered. Dewatering method shall be submitted to the Engineer for review, and any dewatering permits shall be obtained by the Contractor.
- F. Excavation by blasting will not be allowed.
- G. Contractor shall protect the bottom of the excavation from freezing.
- H. Contractor shall not be allowed to excavate beyond the limits shown on the Drawings.
- I. Contractor shall be required to brace and sheet all excavations where necessary to prevent caving or sliding and to protect work men. Shoring for all excavations on this project must be designed by a Professional Structural Engineer registered in the State of North Dakota. The shoring plan design shall be submitted to the Engineer for review prior to commencing any excavation.

### 3.02 SURPLUS MATERIAL

- A. Contractor shall not remove any excavated material from the site without the Engineer's approval.
- B. Owner shall have the first right of refusal of any excavated material.
- C. Surplus fill, organic matter, and other objectionable materials shall become the property of the Contractor and shall be disposed of off-site.
- D. Suitable excavated materials may be used for embankments or other backfill as identified in this Specification.

### 3.03 SITE GRADING

- A. Contractor shall bring the site to grade at elevations, slopes, and contours shown on the Drawings.
- B. All rocks, rock fragments, or other objectionable materials larger than 3 inches in diameter shall be removed from the top 6" of the finished grade, prior to topsoiling.
- C. Contractor shall uniformly dress the slopes to maintain drainage from the site.

**END OF SECTION**

**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Riprap for the sides of the lagoons
- B. Backfill and compaction.
- C. Engineered fill.
- D. Site grading.

**1.02 RELATED SPECIFICATIONS**

- A. Section 01400 – Quality Control
- B. Section 02220 – Trenching, Backfill, and Compacting
- C. Section 02270 – Slope Protection and Erosion Control

**SECTION 2 – PRODUCTS****2.01 MATERIALS**

- A. All materials shall conform to the following specifications, except as indicated otherwise on the Drawings.
  1. Riprap on the inside slopes of all lagoons: The stone shall be durable field stone (round) or quarry stone (angular crushed bedrock) of approved quality, sound, hard, and free of seams, cracks, and other structural defects. The stone should be resistant to abrasion and other defects that would tend to increase unduly its destruction by water and frost actions. Stones shall be generally round or cubiform in shape. Slabby or elongated stone pieces having width or thickness less than one-third the length shall not exceed 10 percent of the total. No sandstone, shale, broken concrete or slate is allowed.
  2. The gradation requirements for the rip rap on the lagoon dikes is as follows:

Rip Rap Size (Inches)	Percent Passing
9	100%
8	70-100%
6	50-80%
3	15-30%
2	0 – 10%
Passing No. 4 Sieve	0 – 2%

- B. All riprap shall be approved by the Engineer.

**SECTION 3 – EXECUTION****3.01 EXAMINATION AND PREPARATION**

- A. Contractor shall establish grades, lines, and levels on the site. Refer to Section 01051 of these Specifications.

**3.02 CONSTRUCTION REQUIREMENTS**

- A. Contractor shall excavate to the lines and elevations as shown on the Drawings.

- B. All loose foundation material shall be thoroughly compacted prior to placement of filter material and riprap. All soil tests shall be completed prior to the placement of riprap. If this is not done, the contractor shall bear full responsibility for removal of riprap and reworking the dikes if tests show inadequate compaction or other noncompliance with specifications.
- C. Geotextile fabric shall be placed prior to installation of the riprap in accordance with Section 02240.
- D. Stones shall not be dropped on the on the fabric from a height greater than one foot. Riprap shall be placed by starting at the lowest elevations and working upwards. At a minimum, riprap shall extend down to the low water level and at least to one foot above the high water level. The contractor will be required to use a drop/drag box to unload and pick up riprap at the lagoon site to avoid soil contamination. The bottom layer of riprap at the pit source will not be allowed to be delivered to the lagoon site if it is contaminated by the soil it is resting on. Any scooping, loading or digging of riprap that includes scooping of the soil below will be rejected unless washed or screened to remove the soil contamination.
- E. Before placement of riprap stone on geotextile, the contractor shall demonstrate to the satisfaction of the engineer that his placement methods will not damage the fabric. For his assurance, the engineer may order the removal of at least four square yards of riprap to inspect for fabric damage.
- F. In no case shall the rock be allowed to be pushed down the slope with a dozer or other equipment traveling on top of the riprap. The riprap shall be placed using a backhoe with a wide bucket or similar equipment so that the rock can be dropped into place. If some segregation of particles does occur, hand placing or rearranging of individual stones by mechanical equipment may be required to the extent necessary to secure the results specified.
- G. Random riprap shall be positioned in a manner that will provide a well-graded, uniform distribution of the various sizes of stone and a well-keyed, multilayered mass of rock with the least practical amount of void space. The surface shall be leveled as necessary to produce a reasonably uniform appearance and the required thickness. Riprap shall be placed to a minimum thickness of 12 inches or greater, if allowed by the engineer, as found to be most convenient to the contractor. Well graded is defined as a continuous distribution of particle sizes from the largest to the smallest components in the proportions such that the successively smaller particles fill the spaces between the larger particles so that the maximum overall density of riprap can be obtained.
- H. The riprap shall be placed from the top to the toe of the dike.
- I. Riprap shall not be contaminated with fines prior to or during placement. After placement, measures shall be taken to prevent soil and other debris from contaminating the riprap. Sections of riprap should be rejected if tests show more than two percent passing the #4 sieve, either as a result of improper construction techniques or subsequent contamination.
- J. Riprap measured by volume will be computed on the basis of actual surface dimensions as staked and the specified thickness.
- K. Bid price shall include all work and material associated with the riprap.

**END OF SECTION**



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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Topsoil (stripping and replacement)
- B. Excavation and embankment
- C. Excess material

**1.02 RELATED SPECIFICATIONS**

- A. Section 02100 – Clearing and Grubbing

**1.03 MEASUREMENT AND PAYMENT**

- A. Grading
  - 1. All topsoil stripping, topsoil replacement, excavation, and embankment shall be included in the bid item lump sum price.
- B. Excess Material
  - 1. Owner has right of first refusal of all excess material.
  - 2. Any excess material not claimed by the Owner shall become property of the Contractor and disposed of at no additional cost to the Owner.
- C. Hauling Imported Fill
  - 1. Hauling of imported fill material shall be incidental to bid item grading.
- D. Stockpile Location
  - 1. Contractor shall obtain and pay for, if necessary, a suitable stockpile location, at no additional cost to the owner.

**SECTION 2 – PRODUCTS****2.01 MATERIALS**

- A. Topsoil
  - 1. Soil shall be natural, loose, friable, loamy, and free from subsoil, toxic materials, unacceptable weeds, and debris greater than one inch in diameter.
  - 2. Any and all unacceptable material shall be removed and disposed of.
- B. Embankment
  - 1. Material shall be found on site, under the topsoil
  - 2. Material shall be free from stone, concrete, roots, stumps, and garbage.
  - 3. Any and all unacceptable material shall be removed and disposed of.
  - 4. Material shall be placed in a maximum of 12-inch lifts; each lift continuously and uniformly compacted.
  - 5. The minimum density of all compacted material under as per Section 02200.3.03.

**SECTION 3 – EXECUTION****3.01 EXAMINATION AND PREPARATION**

- A. Verify excavation and embankment locations established by the Engineer.
- B. Obtain suitable location for disposal of unacceptable debris.
- C. Obtain location for stripped topsoil stockpile.

3.02 TOPSOIL STRIPPING AND REPLACEMENT

- A. At a minimum, six inches of topsoil shall be removed from the entire project site and stockpiled for replacement.
- B. Topsoil shall be kept free from unacceptable debris.
- C. Topsoil shall be evenly replaced over all graded areas.
- D. All replaced topsoil shall be given a smooth finish, suitable for application of grass seed, sod, or other plants.

**END OF SECTION**

**SECTION 1 – GENERAL**

## 1.01 SPECIFICATION INCLUDES

- A. Trenching, Backfill, and Compaction for underground utility installation.
- B. Backfill Materials

## 1.02 RELATED SPECIFICATIONS

- A. Section 01570 – Traffic Control
- B. Section 02100 – Clearing and Grubbing
- C. Section 02700 – Sanitary Sewage Systems

## 1.03 UNIT PRICES

- A. All work associated with Trenching, Backfill, and Compacting shall be incidental and not paid for directly.

## 1.04 SUBMITTALS/SHOP DRAWINGS

- A. Contractor shall submit a sample of the gravel and/or granular backfill material that is to be used to an independent testing laboratory for gradation. This shall be at the Contractor's expense and shall be completed and submitted to the Engineer for approval.
- B. Contractor shall not place any gravel/granular backfill material until approved submittals/shop drawings are returned from the Engineer.
- C. All protective systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer in the State of North Dakota in accordance with CFR Section 1926.652(b) and (c). Contractor shall submit design to engineer.
- D. Any permits for the disposal of dewatered fluid shall be obtained by the Contractor and an approved copy submitted to the Engineer.

**SECTION 2 – PRODUCTS**

## 2.01 BACKFILLING WITH EXCAVATED MATERIALS

- A. Contractor may backfill using excavated materials as detailed in the drawings provided that the Engineer approves and backfill material is free of stone, concrete and clay lumps larger than one-third cubic foot, roots, stumps, rubbish, or any other objectionable materials.
- B. Contractor shall remove any unsuitable material from the backfill and dispose of it off site.

## 2.02 BACKFILLING WITH GRAVEL/GRANULAR MATERIALS

- A. All Gravel/Granular Material shall be bank run, free of lump, roots, rubbish, and other objectionable materials. It shall also be low in clay and silt content.
- B. The Material Gradation shall conform to the following:

<u>Sieve Size</u>	<u>% Passing (by weight)</u>
1"	100
¾"	95-100

#4	85-95
#10	65-85
#40	20-55
#100	0-20
#200	0-20

- C. Pipe bedding material shall be 100% crushed rock sized 1-1/4" minus where groundwater is present (incidental). Rock shall be clean and free from dirt, clay and other objectionable material.

### SECTION 3 – EXECUTION

#### 3.01 EXAMINATION AND PREPARATION

- A. Contractor shall verify the location of all existing utilities.
- B. Contractor shall provide for the protection and continued use of all utilities. Any removal and replacement, bracing, or temporary utilities necessary to complete the work shall be at the Contractor's expense.
- C. Contractor shall provide for a minimum of interference to vehicular and pedestrian traffic and shall provide acceptable temporary accommodations for public and private traffic.

#### 3.02 TRENCHING

- A. Excavated materials will not be classified. Contractor shall be responsible for disposing of excess excavated material and that material deemed unsuitable for backfill.
- B. Contractor shall excavate the trench to the required line and grade.
- C. Contractor's trench shall be minimized to allow for installation of the materials and compaction of the bedding and backfill materials. Unstable trench walls shall be stabilized by the Contractor.
- D. Contractor shall take measures to minimize the length of open trench.
- E. Contractor shall ensure that the trench bottom is firm for the entire length and width. Rock, shale, and hardpan shall be removed to one foot below the bedding elevation and replace with approved material. Unstable material shall be removed from the trench and replaced with approved bedding materials.
- F. Contractor shall take measures to ensure the trench remains free from water.

#### 3.03 BACKFILL AND COMPACTION

- A. Contractor shall restore all underground facilities interfered with to their original or better condition.
- B. Contractor shall begin backfill and compaction operations after utility foundation, haunching material, and initial backfill has been completed.
- C. Contractor shall place a minimum of two (2) feet of backfill over initial backfill before beginning compaction. Backfill is to be placed in maximum twelve (12) inch layers and compacted. Compaction by flooding will not be allowed.
- D. Compaction shall achieve ninety-five percent (95%) of Standard Proctor (ASTM 698 – latest edition) under all paved areas and around all structures.
- E. Compaction shall achieve ninety percent (90%) of Standard Proctor (ASTM 698 – latest edition) in all other locations, unless otherwise noted.

- F. Contractor shall maintain all trenches until approved by Engineer.
- G. The finished trench shall be leveled by the contractor and free of depressions and holes.
- H. Contractor shall dispose of all excess and unsuitable materials.

3.04 FIELD TESTING/QUALITY CONTROL

- A. The Contractor will employ an independent testing laboratory and will test the compaction of backfill at various elevations and locations within the trench no less than every one hundred-fifty (150) feet per three (3) feet of backfill.
- B. Contractor shall provide equipment and personnel as required to assist in locating and uncovering test sites.
- C. All failing tests shall be retested. Any retesting costs shall be the Contractor's expense.

**END OF SECTION**

**SECTION 1 – GENERAL**

## 1.01 SPECIFICATION INCLUDES

- A. Material for Aggregate Base

## 1.02 RELATED SPECIFICATIONS

- A. Section 02220 – Trenching, Backfilling, and Compacting
- B. Section 02240 – Geotextile Fabric

## 1.03 SUBMITTALS/SHOP DRAWINGS

- A. Contractor shall submit a ½ cubic foot sample of the aggregate base material to the Engineer a minimum of five (5) days prior to its use.

**SECTION 2 – PRODUCTS**

## 2.01 AGGREGATE BASE MATERIAL

- A. The gradation of the aggregate base material shall conform NDDOT Class 5 as follows:

<u>Sieve Size</u>	<u>Percent Passing (by weight)</u>
1 ½"	100%
1"	100%
¾"	90% - 100%
#4	35% - 70%
#30	16% - 40%
#200	4% – 10%
Max. Shale and Soft Rock	12%

**SECTION 3 – EXECUTION**

## 3.01 EXAMINATION AND PREPARATION

- A. Verify that the subgrade is graded and compacted in accordance with the Drawings and the Specifications.

## 3.02 INSTALLATION

- A. Place aggregate by truck and spread by approved equipment.
- B. Spread aggregate to the width and depth as shown on the Drawings.
- C. Perform light grading on the entire area while trucks are hauling.
- D. Do not place aggregate on frozen subgrade or base.
- E. Compact gravel to a minimum of 95% of standard proctor density.

## 3.03 FIELD QUALITY CONTROL

- A. Testing:
  1. Density: The Contractor will hire a testing agency to test compacted aggregate base at a rate of one test per 500 square yards of area.

2. Thickness: The testing agency will perform depth tests or cores taken at a rate of one test per 500 square yards of area.
- B. Correction of Failed Tests:
1. Density: Contractor shall scarify and recompact any failed areas.
  2. Thickness: Contractor shall scarify, add material, reshape, and recompact areas where the thickness is deficient by  $\frac{1}{4}$  inch or more.

**END OF SECTION**

**SECTION 1 – GENERAL**

## 1.01 SPECIFICATION INCLUDES

- A. Geotextile Fabric for separation applications.

## 1.02 RELATED SPECIFICATIONS

- A. Section 02205 – Riprap
- B. Section 02220 – Trenching, Backfilling, and Compacting
- C. Section 02230 – Aggregate Base Material

## 1.03 SUBMITTALS/SHOP DRAWINGS

- A. Contractor shall submit product data, samples, manufacturers’ instructions, and manufacturers’ certificates in accordance with Section 01300 of these Specifications.
- B. Contractor shall submit a letter from the manufacturer certifying that the geotextile fabric meets the requirement of this Specification.

## 1.04 DELIVERY, STORAGE, AND HANDLING

- A. All geotextile rolls shall be labeled per ASTM D4873, “Guide for Identification, Storage, and Handling of Geotextiles”.
- B. Rolls shall be furnished with wrapping suitable for protection against moisture and extended ultraviolet exposure.
- C. Store rolls in a manner that protects them from the elements.
- D. If rolls are stored outdoors, elevate and protect rolls with waterproof covering.
- E. Geotextile rolls shall not be exposed to sunlight for a period exceeding fourteen (14) days.
- F. Any damaged geotextiles shall be replaced at no additional expense to the Owner.

**SECTION 2 – PRODUCTS**

## 2.01 MANUFACTURERS

- A. Propex, US Fabrics, or approved equal.

## 2.02 MATERIALS

- A. Geotextile fabric shall be composed of synthetic fibers formed into woven or non-woven fabric. Fibers shall be 85 percent (by weight) polyolefins, polyesters, or polyamide.
- B. Geotextiles shall be free of defects and flaws.
- C. Geotextiles shall meet the following requirements:

<u>Property</u>	<u>Test Method</u>	<u>Units</u>	<u>Min. Requirement</u>
Grab Tensile Strength	ASTM D4632	lbs	200
Grab Elongation	ASTM D4632	Percent	15
Puncture Strength	ASTM D4833	lbs	95
Mullen Burst	ASTM D3786	psi	460
Trapezoidal Tear	ASTM D4533	lbs	75



Apparent Opening Size	ASTM D4571	US Std.	40
Permittivity	ASTM D4491	Sec-1	0.05
Water Flow Rate	ASTM D4491	gpm/sf	4
UV Resistance	ASTM D4355	Percent	70

### **SECTION 3 – EXECUTION**

#### **3.01 EXAMINATION AND PREPARATION**

- A. Clear installation area of all obstructions, native vegetation, roots, and other debris which may damage the geotextile fabric.

#### **3.02 INSTALLATION**

- A. Unroll geotextile smoothly on subgrade in the direction of construction traffic.
- B. Overlap the geotextile in the direction of subbase placement.
- C. Overlap the geotextile a minimum of 18 inches.
- D. Do not drag geotextile across the subgrade.
- E. Replace damaged geotextile fabric with a minimum patch size that is equal to the damaged area plus three feet in all directions.

#### **3.03 AGGREGATE PLACEMENT**

- A. Place aggregate by end dumping adjacent to the geotextile or over previously placed aggregate.
- B. Dumping directly on the geotextile is not permitted.
- C. Spread aggregate from dumped pile onto fabric using tracked equipment.
- D. Traffic directly on geotextile fabric is not permitted.
- E. Use smooth drum roller to achieve specified density.
- F. Vibratory compaction shall not be used on the initial lift of aggregate over the geotextile.
- G. Fill any ruts with additional aggregate and compact to specified density.

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Permanent Erosion Control Measures
- B. Temporary Erosion Control Measures

**1.02 RELATED SPECIFICATIONS**

- A. Section 02050 – Demolition
- B. Section 02100 – Clearing and Grubbing
- C. Section 02220 – Trenching, Backfilling, and Compacting
- D. Section 02950 – Seeding

**1.03 REFERENCES**

- A. General permit authorization to discharge storm water associated with construction activity under the National Pollutant Discharge Elimination System (NPDES). North Dakota General Permit No. NDR04-0000, latest revision.
- B. 'A Guide to Temporary Erosion Control Measures for Contractors, Designers, and Inspectors' – North Dakota Department of Health, latest revision.

**SECTION 2 – PRODUCTS****2.01 SILT FENCING**

- A. Silt fence fabric shall conform to AASHTO M288 silt fence specification, latest edition.
- B. Silt fence support posts shall be made of hardwood with minimum dimensions of 2"x2"x4'.
- C. Secure fabric to wooden posts.
- D. Silt fence that is used in ditches or other high-flow areas shall be reinforced with wire mesh.

**2.02 BALE CHECKS**

- A. Bales shall be wheat straw, oat straw, prairie hay, or bromegrass hay. Bales shall be free of noxious weeds and bound with twine.
- B. Anchor stakes for the bale checks shall be made of hardwood with minimum dimensions of 2"x2"x4'.
- C. The downstream scout apron shall be constructed of double-netted straw erosion control blanket that is anchored with 4" metal landscape staples.

**2.03 TEMPORARY ROCK CONSTRUCTION ENTRANCE**

- A. Rock shall be clean 1" to 2" crushed stone, a minimum of 6" deep, and shall be placed on a geotextile reinforcement fabric.
- B. Geotextile fabric shall be manufactured by Propex, or approved equal.
- C. The entrance shall be a minimum of 10' wide for one-way traffic and 20' wide for two-way traffic. Length shall be as shown on the Drawings.

**2.04 STORM DRAIN INLET PROTECTION**

- A. Provide silt fence fabric and wire or polymeric mesh backing that conforms to the AASHTO M288 96 silt fence specification.
- B. All support posts and wooden cross members shall be made of hardwood. Support posts shall have minimum dimensions of 2"x2"x4'. Cross members shall have minimum dimensions of 2"x4" and the required length for framing.

2.05 DUST CONTROL

- A. Contractor shall apply water to all dust producing areas to stabilize the surface and repeat as necessary to keep the areas moist.
- B. Any haul roads shall be watered and rolled regularly to prevent the production of dust.

**SECTION 3 – EXECUTION**

3.01 PERMIT

- A. The Contractor shall obtain an NPDES permit and comply with all rules and regulations contained in the permit.
- B. The Contractor shall develop and submit to the Engineer a Storm Water Pollution Prevention Plan (SWPPP).

3.02 IMPLEMENTATION SCHEDULE

- A. Prior to commencing any Work, the Contractor shall install all erosion control systems. As the Work progresses, the Contractor shall install and maintain the erosion control measures as indicated in the following implementation schedule.

<b>Erosion Control Implementation Schedule</b>		
<b>Item</b>	<b>Installation</b>	<b>Removal</b>
Proposed Sedimentation Basins	As soon as practicable	Clean upon project completion
Bale Checks	As flow areas are shaped	By Contractor after turf is established
Proposed Silt Fence	Prior to any Construction	By Contractor after turf is established, and as directed by the Engineer
Construction Limits Barrier	Prior to any Construction	By Contractor
Right-of-Way Diversion	As street is graded	By Contractor
Catch Basin Protection	As catch basins are encountered	When Street is built
Rock Entrance	Prior to hauling	When paved
Riprap or geotextile outlet protection	When outlet is installed	Permanent
Wood Fiber Blanket	As areas are graded; all areas exceeding 3:1 slopes	Permanent
Re-vegetation	As areas are completed and topsoil is spread	Permanent

- B. The Contractor shall inspect and make repairs to all erosion control systems after each rainfall, and as needed. The Contractor shall remove all accumulated silt and debris and repair all wash-out areas.

3.03 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

A. Erosion Control

1. The Permittee(s) shall use, where possible, horizontal slope grading, construction phasing, and other construction techniques that minimize erosion.
2. Unless inhibited by snow cover, all exposed soil areas, not including stockpiles or surcharge areas of sand, gravel, aggregate, concrete, or asphalt, with a continuous positive slope within 100 lineal feet of a water of the State, or from a curb, gutter, storm sewer, temporary or permanent drainage ditch, or other storm water conveyance system, which is connected to a water of the State, shall have temporary protection or permanent cover for the exposed soil areas within the following time frames:
  - a. Steeper than 3:1 – 7 Days
  - b. 10:1 to 3:1 – 14 Days
  - c. Flatter than 10:1 – 21 Days
3. The bottom of any temporary or permanent drainage ditch constructed to drain water from the site must be stabilized within 100 lineal feet of a water of the State. Stabilization must be initiated within 24 hours of connecting the drainage ditch to a water of the State, existing gutter, storm sewer, drainage ditch, or other storm water conveyance and completed within five (5) days.
4. Prior to connecting any pipe to a water of the State, the pipe's outlet must be provided with temporary or permanent energy dissipation to prevent erosion.

B. Sediment Control

1. Sediment control best management practices (BMP's), which prevent sediment from entering a water of the State, gutter, storm sewer, ditch or other storm sewer conveyance system, shall be established on all down-gradient perimeters before any up-gradient land disturbing activities begin, and shall remain in place until final stabilization has been established.
2. The Permittee shall minimize vehicle tracking of sediment or soil off site at locations where vehicles exit the construction site onto paved surfaces.

3.04 BEST MANAGEMENT PRACTICES

A. The Contractor shall incorporate best management practices throughout the construction as follows, at a minimum:

1. Grading and excavating shall be kept to a minimum to reduce the possibility of creating runoff and erosion problems.
2. Topsoil shall be removed and stockpiled prior to grading.
3. Land exposure area and time shall be minimized.
4. Exposed areas subject to erosion shall be covered as quickly as possible.
5. Natural vegetation shall be retained wherever feasible.
6. Appropriate structural or agronomic practices to control runoff and sedimentation shall be provided during and after construction.
7. Early completion of stabilized drainage systems will substantially reduce erosion potential.
8. Roadways and parking lots shall be paved or otherwise stabilized as soon as feasible.
9. Clearing and grading shall not be started until a firm construction schedule is known and can be effectively coordinated with the grading and clearing activity.

**END OF SECTION**

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**SECTION 1 – GENERAL**

## 1.01 SPECIFICATION INCLUDES

- A. Polyethylene encasement for installation of underground ductile iron piping, fittings, and valves.

## 1.02 RELATED SPECIFICATIONS

- A. Section 02700 – Sanitary Sewage System

## 1.03 SUBMITTALS

- A. Submit name of Manufacturer of Supplier.
- B. Submit standard data sheet with manufacturer's product information.
- C. Submit sample of product.

**SECTION 2 – PRODUCTS**

## 2.01 MATERIALS

- A. All materials shall conform to the latest edition of AWWA Standard C105.
- B. Material thickness shall be a minimum of 8 mils.

**SECTION 3 – EXECUTION**

## 3.01 INSTALLATION

- A. General: Polyethylene encasement shall prevent contact between pipe and surrounding backfill and bedding material. Overlaps shall be secured by use of adhesive tape, plastic string or any other material capable of holding the polyethylene encasement in place until backfilling operations are completed.
- B. Pipe: Methods A and B are for use with polyethylene tubes and method C is for use with polyethylene sheets.
  - 1. Method A: Cut polyethylene tube to length approximately 2 feet longer than that of pipe section. Slip tube around pipe, centering it to provide 1-foot overlap on each adjacent pipe section, and bunching it accordion-fashion lengthwise until it clears pipe ends.
    - a. Lower pipe into trench and make up pipe joint with preceding section of pipe. A shallow bell hole must be made at joints to facilitate installation of polyethylene tube.
    - b. After assembling pipe joint, make overlap of polyethylene tube. Pull bunched polyethylene from preceding length of pipe, slip it over end of new length of pipe, and secure in place. Then slip end of polyethylene from new pipe section over end of first wrap until it overlaps joint at end of preceding length of pipe. Secure overlap in place. Take up slack width to make snug, but not tight, fit along barrel of pipe, securing fold at quarter points.

- c. Repair any rips, punctures, or other damage to polyethylene with adhesive tape or with a short length of polyethylene tube cut open, wrapped around the pipe and secured in place. Proceed with installation of next section of pipe in same manner.
2. Method B: Cut polyethylene tube to length approximately 1 foot shorter than that of pipe section. Slip tube around pipe, centering it to provide 6 inches of bare pipe at each end. Make polyethylene snug, but not tight; secure ends as described in Method A.
  - a. Before making up joint, slip a 3-foot length of polyethylene tube over end of preceding pipe section, bunching it accordion-fashion lengthwise. After completing joint, pull the 3-foot length of polyethylene over joint, overlapping polyethylene previously installed on each adjacent section of pipe by at least 1 foot; make snug and secure each end as described in Method A.
  - b. Repair any rips, punctures or other damage to polyethylene. Proceed with installation of next section of pipe in same manner.
3. Method C: Cut polyethylene sheet to length approximately 2 feet longer than that of pipe section. Center cut length to provide 1-foot overlap on each adjacent pipe section, bunching it until it clears pipe ends. Wrap polyethylene around pipe so that it circumferentially overlaps top quadrant of pipe. Secure cut edge of polyethylene sheet at intervals of approximately 3 feet.
  - a. Lower wrapped pipe into trench and make up pipe joint with preceding section of pipe. A shallow bell hole must be made at joints to facilitate installation of polyethylene. After completing joint, make overlap as described in Method A.
  - b. Repair any rips, punctures or other damage to polyethylene. Proceed with installation of next section of pipe in same manner.
- C. Pipe-Shaped Appurtenances: Cover bends, reducers, offsets and other pipe-shaped appurtenances with polyethylene in same manner as pipe.
- D. Odd-Shaped Appurtenances: When valves, tees, crosses, and other odd-shaped pieces cannot be wrapped practically in tube, wrap with flat sheet or split length of polyethylene tube by passing sheet under appurtenance and bringing it up around body. Make seams by bringing edges together, folding over twice, and taping down. Handle width and overlaps at joints as described in Method A. Tape polyethylene securely in place at valve stem and other penetrations.
- E. Openings in Encasement: Provide openings for branches, service taps, blow-offs, air valves and similar appurtenances by making X-shaped cut in polyethylene and temporarily folding back film. After appurtenance is installed, tape slack securely to appurtenance and repair cut, as well as any other damaged areas in polyethylene, with tape.
- F. Junctions between Wrapped and Unwrapped Pipe: Where polyethylene-wrapped pipe joins an adjacent pipe that is not wrapped, extend polyethylene wrap to cover adjacent pipe for a distance of at least 2 feet. Secure end with circumferential turns of tape.
- G. Backfill for Polyethylene Wrapped Pipe: Use same backfill material as that specified for pipe without polyethylene wrapping, exercising care to prevent damage to polyethylene wrapping when placing backfill. Backfill material shall be free from cinders, refuse, boulders, rocks, stone or other material that could damage polyethylene.

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Sanitary Sewer Manholes, Frames, and Covers
- B. PVC Gravity Pipe and Fittings
- C. PVC Forcemain and Fittings
- D. Lined Ductile Iron Pipe and Fittings
- E. Joint and Bell Restraints
- F. Valves for Buried Service
- G. Polyethylene Encasement
- H. Polystyrene Insulation

**1.02 RELATED SPECIFICATIONS**

- A. Section 01300 – Submittals
- B. Section 02220 – Trenching, Backfilling, and Compacting
- C. Section 03300 – Cast-in-Place Concrete

**1.03 SUBMITTALS/SHOP DRAWINGS**

- A. Submit Shop Drawings of all pipe, fittings, and valves.
- B. Submit Shop Drawings of all manhole, frames, and castings.
- C. Shop Drawing shall indicate, at a minimum, manufacturer's name and address, sizes, dimensions, and general orientation.
- D. Manhole shop drawings shall include structural calculations stamped by a registered professional engineer. Structural design shall be adequate for the depths shown on the Drawings. Calculations shall include uplift calculations due to ground water. Ground water level shall be assumed to be at finished grade.

**1.04 DELIVERY, HANDLING, AND STORAGE**

- A. Contractor shall take measures to ensure that all materials remain undamaged during delivery, handling, and storage. All methods shall be in accordance with the manufacturer's recommendations and instructions.
- B. Any material found to be damaged shall not be incorporated into the Work and shall be replaced by the Contractor at no additional cost to the Owner.

**SECTION 2 – PRODUCTS****2.01 SANITARY SEWER MANHOLES, COVERS, AND FRAMES**

- A. Precast Concrete Manholes
  - 1. All manhole sections shall conform to the latest edition of ASTM Standard C478.
  - 2. Concrete used to make all sections shall use Type II Portland Cement.
  - 3. All sections, including the covers and base slabs shall be designed for a minimum of H-20 loading.
  - 4. All sections shall be clearly marked with the name of the manufacturer and the date of



manufacture.

5. Manufacturer shall provide sections to the dimensions shown on the drawings with knockouts as indicated.
  6. All base sections, unless noted otherwise, shall be monolithic with a poured invert.
  7. All concrete within the base section shall slope 2 inches per foot towards the invert.
  8. All manhole sections, unless otherwise noted, shall contain steps. Steps shall be Wedge-Loc by Delta Pipe Products or approved equal and shall be spaced a maximum of 16" on center. Steps shall have a 400 lb. vertical resistance strength and a pullout resistance strength of 1,000 lb.
  9. The interior of all sections, including floors and ceilings, shall receive a protective coating in accordance with Division 09.
  10. All manhole joints shall include watertight rubber gaskets conforming to the requirements of the latest edition of ASTM Standard C433.
  11. All pipe penetrations shall have a rubber sleeve and shall be water-tight. A minimum of two (2) stainless steel take-up clamps shall be provided for each rubber sleeve. All hardware shall be stainless steel.
  12. All joints shall receive an external joint wrap.
- B. Cast-in-Place Concrete Manholes/Structures
1. All cast-in-place structures shall utilize Type II Portland Cement and shall conform to the requirements of Section 03300 of the Specifications.
  2. All inverts and shelves shall be formed.
  3. Structures shall have all interior surfaces, including floors and ceilings, coated in accordance with Division 09.
  4. All pipe penetrations shall have a rubber sleeve and shall be water-tight. All hardware shall be stainless steel.
  5. All joints shall receive an external joint wrap.
- C. Covers and Frames
1. All ferrous covers and frames shall conform to the latest edition of ASTM A48, Class 35 B.
  2. Castings shall fit together as to not rock or rattle. Covers shall contain an O-ring gasket and be self-sealing.
  3. All covers shall contain concealed pick holes and shall be labeled 'Sanitary Sewer'.
  4. Manhole chimney seals may be either external or internal and shall be as manufactured by Cretex Specialty Products, or approved equal. The minimum height of cover shall be 7 to 10 inches. All hardware shall be 304 stainless steel.

## 2.02 PVC GRAVITY PIPE AND FITTINGS

### A. PVC Gravity Sewer Pipe

1. All PVC Gravity Sewer Pipe with a diameter of 15 inches and smaller shall be SDR 26, green in color, and conform to the latest edition of ASTM D3034.
2. All PVC Gravity Sewer Pipe with a diameter of 18 inches and larger shall be PS 115, green in color, and conform to the latest edition of ASTM F679.
3. All pipe shall have an integral bell containing a gasketed joint. The gasket shall be elastomeric and conform to the latest edition of ASTM F477.

4. All pipe shall be marked at no greater than five (5) foot intervals with the following:
  - a. Manufacturer's name
  - b. Nominal Pipe Size and Material Designation
  - c. PVC Cell Classification
- B. PVC Gravity Sewer Pipe Fittings
  1. All PVC Gravity Sewer Pipe Fittings and accessories shall be compatible with the piping they are joined to.
  2. All Fittings shall be marked with the following:
    - a. Manufacturer's name
    - b. Nominal Size and Material Designation
    - c. Reference ASTM Standard
  3. All fittings shall be encased in polyethylene as outlined in these Specifications.

## 2.03 PVC FORCEMAIN AND FITTINGS

- A. PVC Forcemain
  1. All PVC Forcemain Piping of sizes 4 inches to 12 inches in diameter shall conform to the latest edition of AWWA Standard C900, shall have a minimum DR of 18, 235 Pressure Class, and be green in color.
  2. All PVC Forcemain Piping of sizes 14 inches to 30 inches in diameter shall conform to the latest edition of AWWA Standard C905, shall have a minimum DR of 18, 235 Pressure Class, and be green in color.
  3. All piping shall be designated utilizing cast iron pipe diameters.
  4. All piping shall contain an integral bell joint with a gasket conforming to the latest edition of ASTM F477.
- B. PVC Forcemain Fittings
  1. All fittings shall be Ductile Iron, Class 350, and shall conform to the latest edition of AWWA Standard C153.
  2. All fitting interiors shall be furnished with 40 mils, polyamine ceramic epoxy lining equal to Tnemec Series 431 Perma-Shield PL coating **OR** high-build ceramic epoxy lining equal to PROTECTO 401 coating.
  3. All fitting exteriors shall be furnished with a minimum 1 mil thick asphaltic coating that conforms to the latest editions of AWWA Standards C151, C110, and C153.
  4. All fittings shall be encased in polyethylene as outlined in these Specifications.
  5. All T-head bolts and nuts shall be Type 304 stainless steel.

## 2.04 LINED DUCTILE IRON PIPE (DIP) AND FITTINGS

- A. Lined DIP
  1. All DIP Piping shall conform to the latest edition of AWWA Standard C150 and shall be Class 250.
  2. Buried pipe and fittings shall be restrained joint pipe and shall be Field Flex-Ring Joint Pipe as manufactured by American Cast Iron Pipe Company, or approved equal. The joint shall be a positive, flexible joint restraint, shall have an allowable joint deflection of a minimum of 3 degrees, and shall be designed to exceed the specified working and surge pressures.
  3. The interior surfaces of all buried ductile iron pipe and fittings, used for conveying

liquids, shall be lined with 40 mils, polyamine ceramic epoxy lining equal to Tnemec Series 431 Perma-Shield PL coating **OR** high-build ceramic epoxy lining equal to PROTECTO 401 coating. All cuts and damaged coatings shall be repaired per the coating manufacturer's instructions.

4. The interior surfaces of all buried ductile iron pipe and fittings, used for conveying compressed air, shall be smooth, clean and uncoated ductile iron.
  5. All ductile iron piping exteriors shall be furnished with a minimum 1 mil thick asphaltic coating that conforms to the latest editions of AWWA Standards C151, C110, and C153.
  6. Each pipe length shall be clearly marked with the following:
    - a. Pipe Class / Nominal Thickness
    - b. Net Weight (Excluding and Lining)
    - c. Casting Period and Country
    - d. Year Produced
    - e. 'DI' or 'Ductile' cast or stamped.
  7. All ductile iron piping shall be furnished with any and all accessories necessary for installation.
  8. All ductile iron piping shall be encased in polyethylene as outlined in these Specifications.
- B. Lined DIP Fittings
1. All DIP Fittings shall conform to the latest editions of AWWA Standards C110 and C153.
  2. All fitting interiors shall be furnished with a 40 mils, polyamine ceramic epoxy lining equal to Tnemec Series 431 Perma-Shield PL coating **OR** high-build ceramic epoxy lining equal to PROTECTO 401 coating, except fittings used for conveying compressed air.
  3. All fitting exteriors shall be furnished with a minimum 1 mil thick asphaltic coating that conforms to the latest editions of AWWA Standards C151, C110, and C153.
  4. All fittings shall be encased in polyethylene as outlined in these Specifications.
  5. All fittings 16" and larger shall be Field Flex-Ring Joint. Fittings smaller than 16" shall be Mechanical Joint. All T-head bolts and nuts shall be type 304SS.

## 2.05 BURIED GATE VALVES AND VALVE BOXES

- A. Gate Valves and boxes shall conform to the latest revision of AWWA C509.
- B. Gate Valves shall be of the inside screw, non-rising stem, resilient wedge type with mechanical joint ends. Epoxy coating shall be applied on valve interior and exterior.
- C. Gate Valves shall have a minimum working pressure of 200 pounds per square inch (psi).
- D. All exterior valve bolts shall be made of stainless steel.
- E. Valve boxes shall be made of cast iron and not less than five (5) inches in diameter. Manual valves shall have gear actuators and tee wrenches, with extension stems and boxes to finished grade. Valve box covers shall be lettered 'SEWER' as required by the installation. Actuator mounting brackets shall be totally enclosed and shall have gasket seals. All exposed nuts, bolts and washers shall be stainless steel.
- F. All valves shall be encased in polyethylene as outlined in these Specifications.

## 2.06 PLUG VALVES FOR BURIED SERVICE

- C. Plug Valves and Boxes
  1. Valves shall be of the non-lubricated eccentric type with resilient faced plugs.

2. Plug-type valves shall be suitable for domestic wastewater buried service with mechanical joint ends and shall be manufactured by DeZuirk, or approved equal and shall meet all requirements stated below.
3. Plug valves shall be of cast iron body, ASTM A126 Class B, or ductile iron ASTM A536. Valve plugs shall be cast iron ASTM A126 Class B, or ductile iron meeting ASTM A536, Grade 65-45-12, covered with a Buna-N Rubber compound. The seats are to be corrosion resistant alloys, either 304 stainless steel, or nickel.
4. The valve exterior and interior shall be painted with 12 mils of high solids epoxy coating.
5. Valves shall be 100% full-port type plug valves providing at least 100% of the full pipe area of the incoming pipe.
6. Pressure ratings shall be 150 psi. Every valve shall be given a hydrostatic and seat test with test results being certified.
7. The valve seat shall be a 1/8" welded overlay of 99 percent pure nickel applied directly to the body on a pre-machined, cast seating surface and machined to a smooth finish.
8. Shaft seals shall conform to ANSI/AWWA C504 and consist of V-type packing in a fixed gland with an adjustable follower designed to prevent over compression of the packing and to meet design parameters of the packing manufacturer. Removable, slotted shims shall be provided under the follower flanges to provide for adjustment and prevent over tightening. Alternatively, valve shaft seals shall be of the self-adjusting U-cup design for reduced maintenance and replaceable without removing the cover from the valve.
9. Permanently lubricated, radial shaft bearings shall be supplied in the upper and lower bearing journals. Thrust bearings shall be provided in the upper and lower journal areas.
10. Both the packing and bearings in the upper and lower journals shall be protected by a shaft seal located on the valve shaft to minimize the entrance of grit into the bearing journal and shaft seal areas.
11. Radial shaft bearings shall be constructed of self-lubricating type 316 stainless steel. The top thrust bearing shall be Teflon. The bottom thrust bearing shall be Type 316 stainless steel. All exterior bolts shall be stainless steel.
12. Valve boxes shall be made of cast iron and not less than five (5) inches in diameter. Manual valves shall have gear actuators and boxes to finished grade. Extension stems shall be provided for valves greater than 15 feet deep. Valve box covers shall be lettered 'SEWER' as required by the installation. Actuator mounting brackets shall be totally enclosed and shall have gasket seals. All exposed nuts, bolts and washers shall be stainless steel.
13. All valves shall be encased in polyethylene as outlined in these Specifications.

## 2.07 JOINT AND BELL RESTRAINTS

- A. All forcemain fittings shall be installed with joint and bell restraints.
- B. Joint restraints shall be Sigma ONE-LOK for DIP, or approved equal.
- C. Joint restraints shall be Sigma PV-LOK for PVC, or approved equal.
- D. All hardware shall be Type 304 stainless steel.
- E. All restraints shall be encased in polyethylene as outlined in these Specifications.

## 2.08 MISCELLANEOUS COUPLINGS AND ADAPTERS

- A. Between different types of pipe and/or fittings special adapters or couplings may be required to provide a proper connection. It is the Contractor's responsibility to ensure proper connection between various types of pipe, to structures, between pipe and valves, gates, fittings, equipment, and other appurtenances. Contractor must separate, isolate or provide appropriate insulation between dissimilar metals and materials to prevent electrolysis. Provide all adapters as required, whether specifically noted or not.
- B. As required, adapters shall be suitable for direct bury, with proper dielectric insulation, and as a minimum, if metallic (not stainless) interiors shall be coated with 8-12 mils of factory applied Epoxy Liner. All buried adapters shall be encased in polyethylene as outlined in these Specifications.

#### 2.09 PLUGS AND CAPS

- A. Provide locking mechanical plugs where shown on the drawings for permanent service. Metallic (not stainless) permanent plug interiors shall be coated with 8-12 mils of factory applied Epoxy Coating.
- B. Provide standard plugs or caps as required for testing services.
- C. Plug or cap or otherwise cover all piping work in progress.

#### 2.10 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement shall be used on all buried ductile iron pipe, ductile iron fittings, adapters, couplings, and all buried valves.
- B. All materials shall conform to the latest edition of AWWA C105 and shall be a minimum of 8 mils thick.
- C. Polyethylene encasement shall prevent contact between the pipe and fittings and surrounding backfill and bedding material. Overlaps shall be secured by use of adhesive tape, plastic string, or other material capable of holding the encasement in place until backfilling operations are completed.
- D. Polyethylene tubes and sheets may be used in accordance with the manufacturer's instructions.
- E. Exercise care when backfilling to not damage encasement. Backfill materials shall be free from cinders, refuse, boulders, rocks, stone, or other materials that could cause damage to the polyethylene.

#### 2.11 POLYSTYRENE INSULATION

- A. Shall be Styrofoam insulation, Specification HH-1-524A, Type 2, Class B, in four (4) foot by eight (8) foot sheets, two (2) inches thick, as manufactured by Dow Chemical Company or an approved equal.

### **SECTION 3 – EXECUTION**

#### 3.01 PROTECTION AND VERIFICATION

- A. Protection
  - 1. Support, protect, and maintain all existing surface and underground utilities for the duration of the project.

2. Provide for the protection of vehicular and pedestrian traffic for the duration of the project.
  3. Unless otherwise provided for, the Contractor shall be responsible for any removal and replacement, relocation, or temporary bracing of any utility necessary to complete the work.
- B. Verification
1. All existing utilities shall be located prior to any excavation work.
  2. Contractor shall coordinate with owners of existing utilities prior to any excavation work.

### 3.02 INSTALLATION OF MANHOLES

- A. Precast Sections
1. Set all sections vertically in true alignment.
  2. All joints and lift holes shall be filled with mortar.
  3. All sections shall be backfilled carefully to avoid damage.
- B. Cast-in-Place Sections
1. Construct vertically in true alignment.
  2. Adhere to all requirements of Section 03300.
- C. Manhole Inverts
1. Construct inverts to conform to the shape of the adjoining piping.

### 3.03 DEWATERING

- A. Contractor shall provide all labor and equipment needed to complete dewatering of subgrade soils for trench installation of the sanitary sewer system.
- B. If requested, Contractor shall submit a dewatering plan and schedule for approval by the Engineer prior to commencing dewatering operations.
- C. Contractor shall be responsible for obtaining a ND Department of Health (NDDH) Permit and completing dewatering activities in accordance with NDDH and other regulatory agency rules and regulations.
- D. Contractor shall be responsible for completing dewatering activities in accordance with the project's Stormwater Pollution Prevention Plan (SWPPP).
- E. Dewatering shall be utilized to eliminate water from trench slopes and bottoms resulting in stable conditions for laying pipe. The soil shall be dewatered, below the bottom of trench elevation, in a manner that provides a firm and suitable pipe foundation. Unsuitable pipe foundations, as a result of inadequate dewatering shall be, removed and corrected with rock or granular material as directed by the Engineer, at no additional cost to the Owner.
- F. Pumps or generators shall be equipped with a sound attenuating enclosure. The enclosure shall reduce noise to less than seventy (70) decibels at twenty-three (23) feet.
- G. All equipment, material, and labor required for dewatering shall be the responsibility of the Contractor and shall be incidental to sanitary sewer system improvements.

### 3.04 INSTALLATION OF PIPING

- A. Gravity Sewer and Forcemain Installation
1. Inspect all pipe prior to installation. Clean pipe of all debris and foreign matter. Replace any damaged lengths.

2. Lay pipe to line and grade as shown on the drawings.
  3. All piping shall be laid with the bells up-grade for gravity installations.
  4. All piping shall be laid with the bells into the direction of flow for forcemain installations.
  5. Assemble pipe and joints in accordance with the manufacturer's recommendations.
- B. Testing of Gravity Sewer Installations
1. All gravity sewers shall be tested prior to final acceptance and payment.
  2. Contractor shall furnish all equipment, materials, and labor for performing the tests and measurements.
  3. All testing is to be done under the supervision on the Engineer.
  4. CCTV Inspection
    - a. Contractor shall inspect all gravity sewers by closed-circuit television.
    - b. Bound inspection reports and inspection DVD's shall be provided to both the Owner and Engineer.
  5. Deflection Testing
    - c. The Contractor shall perform deflection testing on all gravity sewers. Deflection testing shall be performed after the final backfill has been place and compacted and shall be done using a go/no-go device or other method approved by the engineer. The go/no-go devise shall be at least 95% of the undeflected inside diameter of the pipe.
    - d. All pipe exceeding 5% deflection shall be replaced at no additional cost to the Owner.
  6. Infiltration Testing
    - a. The Contractor shall perform infiltration testing of all gravity sewer that is below the groundwater level for the entire length of the pipeline to be tested.
    - b. Allowable infiltration shall not exceed 50 gallons per inch of internal pipe diameter, per mile, per day.
    - c. All sections of pipe exceeding the allowable infiltration rate shall be replace at no additional cost to the Owner.
  7. Exfiltration Testing
    - a. The Contractor shall perform exfiltration testing of all gravity sewer when the groundwater level is less than two (2) feet above the crown of the pipe at the upstream end and no more than six (6) feet above the crown at the downstream end.
    - b. Allowable exfiltration shall not exceed 50 gallons per inch of internal pipe diameter, per mile, per day.
    - c. All sections of pipe exceeding the allowable exfiltration rate shall be replace at no additional cost to the Owner.
- C. Testing of Forcemain Installations
1. The Contractor shall perform hydrostatic testing of all forcemains. Hydrostatic testing shall conform to the latest edition of AWWA Standard C605-05.
  2. All forcemains shall maintain a hydrostatic pressure of at least one hundred fifty percent (150%) of the forcemains working pressure for a minimum of two (2) hours.

3. All forcemains shall maintain an acceptable calculated leakage rate, which will be calculated as follows:

$$\text{DIP or PVC: } L = \frac{SD\sqrt{P}}{148,000}$$

In which:

L = Maximum permissible leakage rate, in gallons per hour

D = Nominal internal diameter of pipe, in inches

P = Average test pressure during leakage test, in psig

S = Length of pipe tested, in feet

### 3.05 CONNECTION TO EXISTING SYSTEM

- A. Contractor shall connect (or reconnect) all new pipes and service laterals to existing pipes, even if not specifically depicted in the Drawings.
- B. Provide all necessary transition adaptors, mechanical joint couplings, and fittings to properly make connection between differing pipe sizes and materials.
- C. Connection to the existing system, including equipment, labor and materials, shall be considered incidental work (this includes pipe to pipe and pipe to manhole connections).

### 3.06 PLACEMENT OF INSULATION

- A. Forcemains, gravity sewer pipe, and service laterals shall be insulated in locations where the pipe is subject to freezing conditions due to shallow locations (less than seven and a half (7.5) feet in depth), when in close proximity to a storm sewer, and as directed by the Engineer.
- B. Rigid insulation board shall be placed within the pipe encasement zone, six (6) inches above the pipe. Prior to placement of the insulation, granular fill shall be leveled and compacted until there is no further visual evidence of increased consolidation or the density of the compacted layer conforms to the density requirements specified in the Section 02220 then leveled and lightly scarified to a depth of one half (1/2) inch. Borrow material placed above and below the insulation shall be free of rock or stone fragments measuring one and one half (1 ½) inches or greater.
- C. Insulation boards shall be placed on the scarified material with the long dimension parallel to the centerline of the pipe. Boards shall be placed in a single layer with tight joints. No continuous joints or seams shall be placed directly over the pipe. If two or more layers of insulation boards are used, each layer shall be staggered so to cover the joints of the layer immediately below.
- D. The Contractor shall exercise precaution to ensure all joints between boards are tight during placement and backfilling with only extruded ends placed end to end or edge to edge.
- E. The first layer of material placed over the insulation shall be 6 inches in depth, free of rock or stone fragments measuring one and one half (1 ½) inches or greater. The material shall be placed in such a manner that construction equipment does not operate directly on the insulation and shall be compacted with equipment which exerts a contract pressure of less than eighty (80) psi. The first layer shall be compacted to conform to the density requirements specified in the Special Provisions.



**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 DESCRIPTION OF WORK**

- A. The Contractor shall secure the services of a professional bypass company from the approved manufacturers list below.
- B. The Contractor shall design, install and operate any temporary bypass pumping systems necessary for the work.
- C. The Contractor shall provide all labor, materials, equipment, fuel and incidentals required and install, field test and operate temporary bypass pumping systems.
- D. The Contractor shall maintain temporary bypass pumping systems so that they are completely functional throughout the required period of service.
- E. The Contractor shall provide repair services and/or replacement equipment 24 hours per day, 7 days per week and shall have response time within a 1/2 hour of an identified need.
- F. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.
- G. Following the required period of service, the Contractor shall remove temporary bypass pumping systems from the site.

**1.02 APPROVED MANUFACTURERS**

- A. Northern Dewatering, Inc.
- B. Rain for Rent
- C. Engineered approved equivalent

**1.03 SUBMITTALS**

- A. The Contractor shall develop a temporary bypass pumping plan for each location. Each plan shall be submitted to the Engineer for approval no less than one month prior to scheduled start of bypass pumping operations. The plan shall include:
  - 1. Name of the bypass company including onsite contact and cell phone number
  - 2. Detailed description of the proposed temporary bypass pumping system
  - 3. Summary of research of the surrounding collection system and the estimated available time prior to critical surcharge elevations in the event of a bypass failure.
  - 4. Drawings and catalogue information required for the construction and installation of equipment
  - 5. Detailed site plans showing elevations and proposed pumping system layout including:
    - a. Layout of pumps, valves and bypass piping.
    - b. Elevation set points on the bypass system as well as critical surcharge elevations.
    - c. Calculations of static lifts, pipe size selections, friction losses, flow velocities and pump selection and shall be stamped by a professional engineer in the State of North Dakota.
    - d. Pump curves showing pump operation range and controls.
    - e. Contractor shall provide a list of personnel who will be operating and maintaining the temporary bypass pumping system.

- f. Temporary pipe supports, anchors, cover material and other accessories as necessary to stabilize the piping systems.
  - g. A list of all equipment to be used, including operation conditions and maintenance requirements.
- B. Detailed emergency response plan to be followed in the event of failure or spill. The plan at a minimum shall include:
  - 1. A list of 24-hour emergency contacts for the duration of all the temporary bypasses. Contacts list shall include a minimum of four (4) names and cell phone numbers.
  - 2. A detailed list of all pump, valves and piping parts, fittings and repair accessories that are within the vicinity and the location in which the items are stored.
  - 3. List of area tanker trucks capable of hauling wastewater.
  - 4. Disposal site for hauled wastewater.
  - 5. Detailed description of proposed clean up procedures in the event of a spill.
  - 6. List of employees on cleanup and repair crews along with their roles and responsibilities.
  - 7. Local and state officials that will be contacted in the event of a spill.
  - 8. Description of information that shall be recorded, and submitted to the Engineer, in the event of a spill. Information shall at a minimum include:
    - a. Date, time, location and weather
    - b. Impacts
    - c. Cause
    - d. Cleanup or corrective measures underway and to be taken
    - e. Measures taken to mitigate spill potential in future
    - f. Individuals or agencies notified

## SECTION 2 – SYSTEM DESCRIPTION

### 2.01 GENERAL SYSTEM REQUIREMENTS

- A. Sanitary sewer shall not be interrupted at any time.
- B. The existing lift stations shall remain fully operational during the installation the temporary bypass pumping system.
- C. Spills or surface discharge of any wastewater, including pump priming blow-by, shall not be permitted. The Contractor shall be responsible for all spills, resultant cleanup costs and fines.
- D. The Contractor shall be responsible for damages caused by any wastewater backup including, but not limited to, the Contractor's operations, improper bypass system design and/or bypass system failures.
- E. The Contractor shall be advised, sanitary sewer systems often convey large household, commercial, industrial, and construction items and/or debris. Any damage to bypass equipment as a result of the contents within the wastewater stream shall be the Contractor's responsibility.
- F. Each bypass pumping system shall be equipped with a minimum of two (2) portable diesel powered pumps plumbed into one common forcemain pipe. In addition to the two (2) pumps plumbed into the system, the Contractor shall have one (1) additional tire mounted backup pumps within the immediate vicinity that can be installed within a 1/2 hour of a detected need.

## 2.02 PROTECTION OF TEMPORARY SYSTEM

- A. It is the contractor's responsibility to protect the temporary system from any damage that may result from vandalisms, traffic, or other act.
- B. It is the Contractor's responsibility to insulate, shelter, or heat the system in the event of cold weather.
- C. Contractor shall repair any damages caused to adjacent structure and facilities to a condition equal to or better than that prior to construction.
- D. Contractors shall provide temporary fencing or other means of protections around any open manhole or structure.

## 2.03 EXISTING CONDITIONS

- A. Contractor shall verify and confirm all existing utilities that are to remain in service and shall take measures to protect these utilities from damage.
- B. The existing hydraulic system conditions have been estimated at 405 gpm at 56 feet Total Dynamic Head (TDH). These parameters shall be field verified by the Contractor prior to any design or installation.

## SECTION 3 – EXECUTION

### 3.01 PREPARATION

- A. The Contractor shall minimize the length of time the temporary conveyance system is utilized. The existing lift station shall remain operation and online until all equipment and materials necessary for the rehabilitation of the facility are onsite.
- B. Contractor shall take measures to ensure accessibility of adjacent buildings and traffic flow around Lift Station during construction.
- C. Contractor shall take measures to protect adjacent buildings, structures, vehicles, and persons from debris and damage.
- D. Contractor shall provide shoring and bracing for adjacent structures and utilities.
- E. Contractor shall coordinate with the owners of utilities for shut off.

### 3.02 TEMPORARY PUMPS

- A. The pumps shall be equipped with a noise mitigating canopy to reduce noise to 70 decibels or less at 23 feet.
- B. The tire mounted backup pumps shall be capable of installation within a ½ hour of a need.
- C. Each pump shall be equipped with its own simplex control panel with float switch liquid level controls. Floats shall be provided for a pre-high level alarm and a high level alarm.

### 3.03 TEMPORARY FLOATS AND CONTROLS

- A. An auto dialer utilizing cellular technology shall be provided to alert both the contractor and City Personnel of a high water condition.
- B. Floats for operation and high level auto dialer alarm shall be set in the field as directed by the Engineer and City Personnel. The Contractor shall mount and wire any necessary temporary panels and ancillary devices.

### 3.04 TEMPORARY PIPING

- A. Contractor shall provide and install all necessary piping, valves, and ancillary items necessary to complete the temporary diversion pumping.
- B. Each pump shall be connected to the temporary piping by a manifold system capable of connecting no less than three (3) pumps. The manifold shall be fitted with a check valve and gate valve at each pump connection to allow independent pump removal and/or maintenance without disruption to the temporary system.
- C. Provide a check valve and gate valve on downstream end of temporary forcemain for isolation purposes.
- D. Provide all materials, labor, and equipment for connection to the existing forcemain or manhole.
- E. All piping, valves, and ancillary items shall be removed at the completion of the temporary diversion pumping period.

### 3.05 ELECTRICAL

- A. Contractor shall provide temporary power to the new control panels and shall remove at the completion of construction.
- B. The Contractor shall arrange for a fuel delivery to fill all fuel tanks at least once per day or more frequently as equipment requires. All pumps, generators and equipment shall be placed on a new tarp to protect against spills of petroleum products. Any spills on the tarp must be cleaned with absorbent materials and properly disposed of.

### 3.06 START-UP

- A. Contractor shall schedule a meeting with Owner and Engineer to discuss coordination and the installed bypass system prior to placing online.
- B. Contractor shall prepare a written diversion plan for submittal to the Owner and Engineer.
- C. Contractor shall schedule a pre-diversion meeting to discuss specific aspects of the diversion pumping system.
- D. Contractor shall successfully operate the temporary diversion pumping system for a minimum of seventy-two (72) consecutive hours prior to taking the Lift Station off line.
- E. For informational purposes, the Contractor shall provide the Owner's Personnel with a minimum of four (4) hours of instruction on how to operate the temporary diversion pumping system.
- F. Contractor shall have a 24-hour, on-call service number in case of pump failure or other complications.

### 3.07 SYSTEM MONITORING

- A. Each bypass system shall be monitored on a daily basis. Daily monitoring reports shall be submitted to the Engineer weekly. The report shall include the date and time of the inspection, name of inspector, weather conditions, system observations including any issues and corrective actions taken.

### 3.08 SYSTEM DECOMMISSIONING

- A. The contractor shall successfully operate the new lift station for a minimum of seventy-two (72) hours prior to disassembling the bypass system.
- B. At the completion of successful lift station operations, the Contractor shall disassemble and remove the temporary bypass system including all pumps, valves and piping up to the bypass connection.

**END OF SECTION**

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**SECTION 1 – GENERAL****1.01 SPECIFICATION INCLUDES**

- A. Topsoiling
- B. Fertilizing
- C. Seeding
- D. Mulching
- E. Watering

**1.02 RELATED SPECIFICATIONS**

- A. Section 02050 – Demolition
- B. Section 02100 – Clearing and Grubbing
- C. Section 02220 – Trenching, Backfilling, and Compacting

**1.03 ENVIRONMENTAL CONDITIONS**

- A. Seeding shall not take place when wind speeds exceed 15 miles per hour (mph), on standing water, on frozen ground, or when soil is excessively wet.

**SECTION 2 – PRODUCTS****2.01 MATERIALS**

- A. Topsoil shall be natural soil, loose, friable loam, free of subsoil, toxic substances, objectionable weeds, and debris larger than one (1) inch in diameter, which has produced healthy crops or grasses.
- B. Fertilizer shall be 5-10-5.
- C. Required Seed Mixes:  
Seed shall be labeled in accordance with USDA Rules and Regulations under the Federal Seed Act. Wet, moldy, or otherwise damaged seed will not be accepted. Weed seed shall not exceed 0.5 percent of the total mixture. Mixture and minimum purity requirements shall be as follows:

For Natural and/or Native Grass Areas, the required seed mix shall have the mixture and minimum purity requirements shall be as follows:

<b>Grass Species</b>	<b>Percent by Weight</b>	<b>Purity</b>	<b>Percent Pure Live Seed</b>
Canada Wildrye	30%	90%	85%
Western Wheatgrass	20%	90%	85%
Northern Wheatgrass	20%	90%	85%
Green Needle	6.5%	90%	85%
Sideoats	6.5%	90%	85%
Little Bluestem	10%	90%	85%
Slender Wheatgrass	5%	90%	85%
Blue Grama	2%	90%	85%
Rate of Seeding = 15 PLS/1 Acre if broadcast seeding, 10 PLS/1 Acre if drilled			

For Wetland Areas, A hydrophytic seeding mix shall be applied to a wetland buffer area to establish hydrophytic vegetation in the wet areas. The seed used to reestablish vegetation in the wetland areas will be certified weed free. The mixture and minimum purity requirements shall be as follows:

<b>Wetland Seeding Mix</b>	
<b>Species</b>	<b>Seeding Rate PLS lbs./acre</b>
Prairie Cord Grass	1.1
American Slough Grass	0.2
Fowl Blue Grass	0.2
Fox Sedge	0.2
American Manna Grass	0.2
Fowl Manna Grass	0.1
Canada Wild-Rye	1.3
<b>TOTAL</b>	<b>3.3</b>

- D. Mulch shall be straw mulch. Material for straw mulch shall consist of native hay or the straw from oats or barley and shall be seed free to prevent introduction of seeds as defined by North Dakota Department of Agriculture. At least 50% of the mulch, by weight, shall be 10 inches or more in length. Dry mulching material that breaks and does not bend is not acceptable.
- E. Hydromulch shall consist of wood cellulose fibers that shall contain no germination or growth inhibiting factors. It shall not contain nor be processed from sawdust or pulverized newspaper. It shall be dyed an appropriate color to allow visual metering of its application and shall have the property of becoming dispersed and suspended when agitated in water. Hydromulch shall be applied at a minimum rate of 2,300 pounds per acre.

### SECTION 3 – EXECUTION



### 3.01 EXAMINATION AND PREPARATION

- A. Contractor shall verify that the areas to be seeded are free of stones, sticks, roots, and other debris. Any debris shall be disposed of by the Contractor at no additional cost to the Owner.
- B. Topsoiling: Contractor shall shape the area to the required cross section and contour and place topsoil to an average minimum depth of six (6) inches. Any additional topsoil necessary to achieve this average depth shall be provided by the contractor at no additional cost to the Owner.
- C. Fertilizing: Fertilizer shall be applied prior to seeding. Apply fertilizer uniformly and at a rate of ten pounds per 1,000 square feet and work into the topsoil.
- D. Seeding Natural or Native Grass Areas: The soil shall be moist when seeding. Seed shall be mechanically sown with a drill or Brillion type seeder. Seed may be broadcast sown in small areas and covered ½ inch by a harrow or applied device. Apply seed uniformly at the specified rate for the mix. Hydromulch shall be applied at the rate specified after seeding.
- E. Straw mulching shall be applied by a mechanical blower that provides uniform coverage of the seed bed. Straw mulching shall be applied at a rate of 4,000 pounds per acre. Straw mulching shall be anchored by punching with a mulch tiller that anchors the mulch 3 inches into the ground. Any mulch blow off the site shall be cleaned up and replaced.
- F. Watering: Seeding shall be watered daily until a good stand of grass is obtained.

### 3.02 PROTECTION AND WARRANTY

- A. Damaged or dead seeded areas shall be replaced at no additional expense to the Owner for a period of 180 days after final completion of the project.

**END OF SECTION**

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**SECTION 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.02 SUMMARY**

- A. Perform cast-in-place concrete work in accordance with ACI 318, and as specified in this Section.
- B. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
- C. See for locations.

**1.03 Related Sections:**

- A. Section 01300 – Submittals
- B. Section 01458 – Testing Laboratory Services

**1.04 DEFINITIONS**

- A. Cementitious Materials: Portland cement alone or in combination with flyash; subject to compliance with requirements.

**1.05 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail installation layout, fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
- E. Location of construction joints is subject to approval of the Structural Engineer.
- F. Qualification Data: For Installer and manufacturer.
- G. Welding certificates.
- H. Material Certificates: For each of the following, signed by manufacturers:
  - I. Cementitious materials.
  - J. Aggregates.
  - K. Admixtures.
  - L. Form materials and form-release agents.
  - M. Steel reinforcement and accessories.
  - N. Floor and slab treatments.

- O. Bonding agents.
- P. Adhesives.
- Q. Insulation.
- R. Repair materials.
- S. Surface flatness and levelness measurements indicating compliance with specified tolerances.
- T. Field quality-control reports.
- U. Minutes of preinstallation conference.

#### 1.06 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- D. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - F. ACI 301, "Specifications for Structural Concrete"
  - G. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- H. Concrete Testing Service: Contractor will engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- I. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
  - 1. Contractor's superintendent.
  - 2. Independent testing agency responsible for concrete design mixtures.
  - 3. Ready-mix concrete manufacturer.
  - 4. Concrete subcontractor.
  - 5. Special concrete finish subcontractor.
- J. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, forms and form removal limitations, vapor-retarder installation, void form placement, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.

## SECTION 2 – PRODUCTS

### 2.01 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Plywood, metal, or other approved panel materials.
- C. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
  - 1. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
- D. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- E. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- F. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
- G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- H. Form-Release Agent: Commercially formulated, non- VOC form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- I. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- J. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
- K. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface
- L. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface
- M. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.
- N. Rigid insulation support at stoops: See Structural Drawings.

### 2.02 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Low-Alloy-Steel Reinforcing Bars For Welding: ASTM A 706/A 706M, (weldable) deformed.
- C. Plain-Steel Wire: ASTM A 82/A 82M, galvanized, fabricated from as-drawn steel wire into flat sheets.

### 2.03 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut true to length with ends square and free of burrs. (smooth bars in slab construction joints)

- B. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
  - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

#### 2.04 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
- B. Portland Cement: ASTM C 150, Type I/II – gray. Supplement with the following:
- C. Fly Ash: ASTM C 618, Type C meeting Class F. Use of fly ash in concrete mix is not to exceed limits indicated in the concrete mix designs listed in general structural notes on structural drawings.
- D. Normal-Weight Aggregates: ASTM C 33, Class 4S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
- E. Maximum Coarse-Aggregate Size: See concrete mix designs in General Structural Notes.
- F. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- G. Local aggregates approved for highway construction are acceptable provided they meet the project specifications.
- H. Water: ASTM C 94/C 94M and potable.

#### 2.05 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride. Concrete must have a verified (tested and documented) slump not exceeding that indicated in the mix designs and the General Structural Notes before adding chemical admixtures. Use of admixtures is limited as noted in concrete mix designs listed in General Structural Notes on structural drawings.
- C. Water-Reducing Admixture: ASTM C 494/C 494M, Type A containing not more than 0.05 percent chloride ions.
- D. Retarding Admixture: ASTM C 494/C 494M, Type B.
- E. Accelerating Admixture: ASTM C 494/C 494M, Type C.
- F. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D containing not more than 0.05 percent chloride ions.
- G. Water Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.

- H. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F or Type G and containing not more than 0.05 percent chloride ions.
- I. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
- J. Prohibited Admixtures: Calcium chloride thiocyanates or admixtures containing more than 0.05 percent chloride ions are not permitted.
- K. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.06 CURING MATERIALS

- A. Evaporation retarder in first paragraph below temporarily reduces moisture loss from concrete surfaces awaiting finishing in hot, dry, and windy conditions. Evaporation retarders are not curing compounds.
- B. Products: Subject to compliance with requirements, provide the following:
  1. Axim Italcementi Group, Inc.- CATEXOL CimFilm.
  2. BASF Construction Chemicals - Building Systems- Confilm.
  3. Conspec by Dayton Superior- Aquafilm.
  4. Dayton Superior Corporation- Sure Film (J-74).
  5. Edoco by Dayton Superior- BurkeFilm.
  6. Euclid Chemical Company (The), an RPM company- Eucobar.
  7. L&M Construction Chemicals, Inc.- E-CON.
  8. Meadows, W. R., Inc.- EVAPRE.
  9. Metalcrete Industries- Waterhold.
  10. Nox-Crete Products Group- MONOFILM.
  11. Sika Corporation- SikaFilm.
  12. SpecChem, LLC- Spec Film.
  13. Symons by Dayton Superior- Finishing Aid.
  14. TK Products, Division of Sierra Corporation- TK-2120 TRI-FILM.
- C. Products:
  1. Transguard 4000- Reef Industries, Inc.
  2. Hydracure M5 by PNA Construction Technologies, Inc.
- D. Water: Potable.
- E. Non-membrane chemical cure with a fugitive dye which shall restrict the water loss to a maximum of 1 kilogram per square meter (0.20 lb/sf) in 72 hours when tested per ASTM C 156. The manufacturer shall certify that the compound is compatible with all subsequent toppings, coatings, and adhesives.
- F. Products:
  1. L&M Cure; L&M Construction Chemicals, Inc.
  2. Brocure; Noxcrete.
- G. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A. (Not allowed, AppendixV-37 item 19 MnSCU 2005)
- H. Products: Subject to compliance with requirements, provide one of the following:
  1. Conspec by Dayton Superior- Sealcure 1315 WB.
  2. Euclid Chemical Company (The), an RPM company- Super Diamond Clear VOX; LusterSeal WB 300.
  3. L&M Construction Chemicals, Inc.- Lumiseal WB Plus.

4. Meadows, W. R., Inc.- Vocomp-30.
5. Symons by Dayton Superior- Cure & Seal 31 Percent E.

#### 2.07 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber. Superior grade closed cell polyethylene.
- B. Bonding Agent - ASTM C 1059/C 1059M, Type II, Non-redisperible acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
- D. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
  1. Available Products:
    - a. Euco #452 Series or Durakrete Series.
    - b. Sikadur Hi-Mod Series by the Sika Chemical Corp.

#### 2.08 POST-INSTALLED ANCHORS

- A. Expansion Bolts: Anchors shall be wedge type with threaded bodies meeting the description of Federal Specification A-A 1923A, Type 4. Interior bolts shall be zinc plated, exterior bolts and bolts in the cavity of masonry cavity walls shall be hot-dip galvanized or stainless steel. Bolts provided are to be as indicated structural drawings and details.
- B. Available Products:
  1. Hilti; Kwik Bolt III.
- C. Adhesive Anchors: Anchors shall be installed with a two component injectable adhesive using the manufacturer's mixing nozzle. Threaded rods shall be carbon or stainless steel with a minimum yield of 58 ksi. Rebar anchors shall be 60 ksi. Provide adhesive anchors as indicated on structural drawings and details.
- D. Available Products:
  1. Hilti; HIT HY 150 MAX or HIT RE-500.

#### 2.09 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.
- B. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
- C. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
- D. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
- E. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

- F. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6.4 mm) and that can be filled in over a scarified surface to match adjacent floor elevations.
- G. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
- H. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
- I. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
- J. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.

#### 2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- C. Cementitious Materials: The use of fly ash (or pozzolan, ground granulated blast-furnace slag, and silica fume per prior approval) to reduce the total amount of portland cement is acceptable provided the amount does not exceed the amounts noted in the mix designs noted in the General Structural Notes.
- D. Fly Ash: Percentage used in concrete mix is not to exceed that noted in mix designs listed in General Structural Notes.
- E. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.
- F. Admixtures: Use admixtures according to manufacturer's written instructions.
- G. Use water-reducing and high-range water-reducing admixture in concrete, as allowed in General Structural Notes on structural drawings, for placement and workability.
- H. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- I. Use water-reducing admixture in pumped concrete and concrete with a water-cementitious materials ratio below 0.50.

#### 2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

#### 2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.
- B. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.



## SECTION 3 – EXECUTION

### 3.01 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
- D. Retain surface classes, usually two or more, in two subparagraphs below. See discussion in "Formwork" Article in the Evaluations. Coordinate with rough- and smooth-form finishes in "Finishing Formed Surfaces" Article.
- E. Construct forms tight enough to prevent loss of concrete mortar.
- F. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
- G. Install keyways, reglets, recesses, and the like, for easy removal.
- H. Do not use rust-stained steel form-facing material.
- I. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- J. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- K. Chamfer exterior corners and edges of permanently exposed concrete.
- L. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- M. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- N. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- O. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.
- P. Contractor shall be responsible for forming all footings. Earth forming of footings is not acceptable.

### 3.02 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
- B. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

### 3.03 REMOVING AND REUSING FORMS

- A. General: Formwork for that does not support weight of concrete may be removed after cumulatively curing at not less than 48 hours at 50 deg F (10 deg C) after placing concrete. Concrete has to be hard enough to not be damaged by form removal operations and curing and protection operations need to be maintained.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

### 3.04 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.
- E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- F. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging and not to exceed 48 inches. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire. Pulling or hooking welded wire reinforcements is not acceptable.
- G. Wet setting of masonry vertical dowels is acceptable under the following conditions:
  - H. The concrete must be plastic.
  - I. The bars must be located accurately and restrained from moving until the concrete has cured.
  - J. Lap lengths in the footing must be maintained.
- K. Wet setting of any other reinforcement is NOT acceptable.

### 3.05 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- D. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or

- planes of weakness. If a section cannot be placed continuously, provide bulkheaded construction joints as indicated. Deposit concrete to avoid segregation.
- F. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
  - G. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
  - H. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
  - I. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  - J. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - K. Maintain reinforcement in position on chairs during concrete placement.
  - L. Screed slab surfaces with a straightedge and strike off to correct elevations.
  - M. Slope surfaces uniformly to drains where required.
  - N. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
  - O. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - P. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
  - Q. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  - R. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
  - S. Hot-Weather Placement: Comply with ACI 301.
  - T. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  - U. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### 3.06 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
- B. Apply to concrete surfaces not exposed to public view.

- C. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
- D. Apply to concrete surfaces exposed to public view.
- E. All cast-in-place concrete surfaces shall be rubbed with patching mortar to ensure uniform surface.

### 3.07 FINISHING SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in one direction.
- C. Apply scratch finish to surfaces indicated, exterior slabs and to receive mortar setting beds for bonded cementitious floor finishes.
- D. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
- E. Apply float finish to surfaces indicated to receive trowel finish.
- F. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighen until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
- G. Apply a trowel finish to surfaces exposed to view.
- H. Finish surfaces to the following tolerances or stricter tolerance if indicated in Division 09 Sections, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface.
  - 1. Specified overall values of flatness, F(F) 25 and of levelness of F(L) 20; with minimum local values of flatness F(F) 20 and of levelness of F(L) 15. Use on elevated slabs, mat slabs and toppings.
- I. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
- J. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

### 3.08 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

### 3.09 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing. Do not use evaporation reducer as a finishing aid.
- C. Formed Surfaces: Cure formed concrete surfaces not less than 28 days. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by the following:
- F. Moisture Curing: Keep surfaces continuously moist for not less than five days with the following combination of methods and materials:
  - 1. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
- G. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than five days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- H. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Maintain continuity of coating and repair damage during curing period.

### 3.10 CONCRETE SURFACE REPAIRS

- A. All cast-in-place concrete surfaces shall be rubbed with patching mortar to ensure uniform surface.
- B. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- C. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.
- D. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
- E. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

- F. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
- G. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.
- H. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
- I. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, bug holes, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
- J. After concrete has cured at least 14 days, correct high areas by grinding.
- K. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
- L. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations. Grind high areas including areas at contraction joints.
- M. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
- N. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
- O. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- P. Perform structural repairs of concrete, subject to Structural Engineer's and Architect's approval, using epoxy adhesive and patching mortar.
- Q. Repair materials and installation not specified above may be used, subject to Structural Engineer's and Architect's approval.

### 3.11 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Engineer. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.

### 3.12 PROTECTION

- A. Do not permit traffic over unprotected concrete surface until fully cured.

### 3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: General Contractor will engage a qualified independent testing and inspecting agency per Division 01, to perform field tests and inspections and prepare test reports.
- B. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.
- C. Special Inspections & Reporting by Independent Testing Agency:
- D. Steel reinforcement placement.
- E. Steel reinforcement welding.
- F. Headed bolts and studs.
- G. Verification of use of required design mixture.
- H. Concrete placement, including conveying and depositing.
- I. Curing procedures and maintenance of curing temperature.
- J. Verification of concrete strength before removal of shores and forms from beams and slabs.
- K. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
- L. Testing Frequency: Obtain at least one composite sample for each 50 cubic yd or fraction thereof of each concrete mixture placed each day.
  - 1. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
- M. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
- N. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
- O. Concrete Temperature: ACI 306/ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
- P. Compression Test Specimens: ASTM C 31/C 31M.
  - 1. Cast and laboratory cure one set of four standard cylinder specimens for each composite sample.

- Q. Compressive-Strength Tests: ASTM C 39/C 39M for standard cylinders; test one laboratory-cured specimens at 7 days, one at 14 days and one specimens at 28 days. Hold one cylinder.
  - 1. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
- R. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
- S. Test results shall be reported in writing as outlined in Section 01458. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- T. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
- U. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by the Structural Engineer and Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by the Structural Engineer and Architect.
- V. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- W. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- X. Measure slab flatness and levelness of slabs according to ASTM E 1155 (ASTM E 1155M) within 72 hours of finishing. The slab flatness and levelness are the responsibility of the General Contractor. Any remedial work (grinding or filling) to arrive at the proper flatness and levelness shall be the responsibility of the General Contractor. All other floors do not need to be measured unless the suitability of the floor for a particular floor covering is called into question. Remedial work shall be the responsibility of the General Contractor.

**END OF SECTION**